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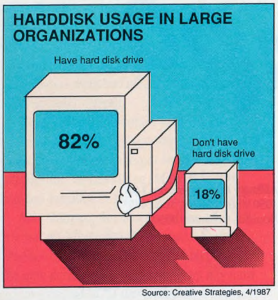


Source: Creative Strategies, 4/1987

New Apple sales chief to spearhead charge on corporate America

BY JIM BEAVER
MacWEEK Staff

Apple's appointment of Charles M. Boesenberg to head its U.S. sales and marketing force indicates the company's commitment to the Mac II and portends major changes in sales and marketing strategy, say industry analysts.

Boesenberg, 38, joined Apple in February as vice president of U.S. sales, and replaces William Campbell, who left the company to head Apple's new software subsidiary.

As the company moves more into the corporate environment and gradually toward the technical workstation with the Mac II, its sales force and dealer network will have to learn new

See BOESENBERG on Page 21.

Vendors search for fixes for copy-protection snags

BY KRISTINA SULLIVAN
Special to MacWEEK

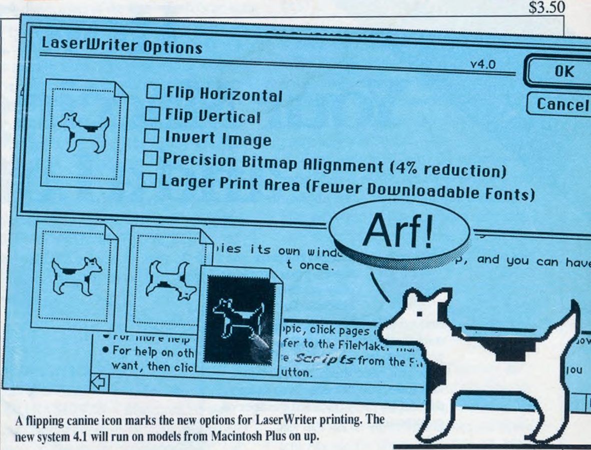
The strikes against copy protection are mounting. Users of the new Macintosh II and SE computers are finding that some of their copy-protected programs, including Lotus Jazz, Quark XPress and Adobe Illustrator, will not run on the new machines.

Changes in the Mac II hardware design have caused the copy-protection scheme MACLoK by Softguard Systems Inc. of Santa Clara, Calif., to function improperly. MACLoK is used by about 150 software developers, according to Softguard officials. As soon as the problem was discovered and corrected, Softguard began providing software developers with an upgraded version of MACLoK that makes the applications run normally.

But not all developers are providing a fix to current users. Lotus Development Corp. of Cambridge, Mass., for example, will provide users with a patch that allows Jazz to run correctly on the Mac SE, but a decision has not been made regarding Mac II incompatibilities.

The problems with the Mac II are "directly related to our copy protection," said Adam Hertz, Lotus development manager for "Galaxy," the code name for an upcoming replacement to Jazz. "What we're evaluating is whether we can make our users 'well' in the

See COPY PROTECTION on Page 21.


LaserWriter Options
v4.0
☐ Flip Horizontal
☐ Flip Vertical
☐ Invert Image
☐ Precision Bitmap Alignment (4% reduction)
☐ Larger Print Area (Fewer Downloadable Fonts)

A flipping canine icon marks the new options for LaserWriter printing. The new system 4.1 will run on models from Macintosh Plus on up.

Apple enhances key products

New System, Finder off to a buggy start

BY JIRI WEISS
MacWEEK Staff

CUPERTINO, Calif. — Apple Computer Inc. has released a new version of its operating system for Macintosh computers from the Mac Plus up.

Although Apple says the new System 4.1 with Finder 5.5 includes many enhancements, users have reported on the Macintosh Users Group bulletin board that the new version can cause system crashes with common applications such as Apple's MacDraw and MacTerminal and Microsoft's Excel.

Excel, Version 1.03 or lower, crashes when it is used with Desk Accessories that have their own menus. "For example, launch Excel, open Key Caps (a desk accessory), then close Key Caps and watch it crash," Andy Hertzfeld, one of the original designers of Macintosh system software, wrote on CompuServe.

Registered Excel users should have received by now Excel Version 1.04, which solves the

See SYSTEM 4.1 on Page 21.

Beefed-up AppleShare network file server set for June release

BY GIL DAVIS
Special to MacWEEK

CUPERTINO, Calif.. — Four months after introducing AppleShare to widespread cheers, Apple Computer Inc. is preparing to enhance the network file server program with new features. According to sources close to the company, Version 1.1 of AppleShare is scheduled to be released June 15.

The new version, now being beta tested at businesses, will run on the Macintosh II, SE and earlier versions. New features include concurrent foreground services, which will allow third-party developers to provide functions like printer spooling and automatic back-up of server files.

Other new features include faster handling of large numbers of simultaneous users, automatic optimization of the RAM cache on the server and textual display of users' new passwords. Sources say that the new version will also provide a performance boost over the original version, especially when being accessed by more than five users.

See APPLESHARE on Page 21.

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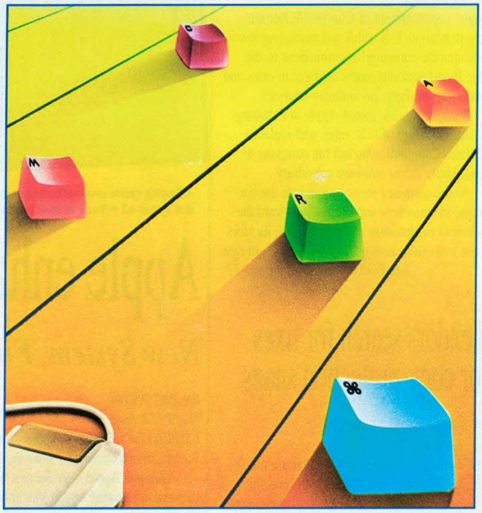

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Circle 274 on reader service card

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General Computer shipping new HyperDrive FI/40

BY JIRI WEISS
MacWEEK Staff

CAMBRIDGE, Mass. — General Computer Corp. will start shipping this month a high-speed internal 40-Mbyte Winchester hard disk for the Macintosh SE and a 40-Mbyte tape backup for the Macintosh Plus, SE and II.

The new $1,599 hard-disk drive, called HyperDrive FI/40, features an average access time of 30 milliseconds. It includes an asynchronous disk driver that optimizes data access for multitasking, as on a file server, the company says. The driver interleaves different jobs rather than letting one tie up the entire server.

To prevent damage to the disk when the system is moved, the head of the drive withdraws itself from the disk automatically when the system is switched off, according to a General Computer official.

HyperDrive FI/40 comes with file encryption, disk formatting, diagnostics software and a LaserSpeed printer spooler from Think Technologies Inc. of Lexington, Mass. It will be sold and installed in the SE by Apple dealers.

Also shipping this month will be a $1,399 external 40-Mbyte Small Computer Systems Interface (SCSI) tape drive called HyperTape. The new drive is designed to backup any hard disk or external SCSI drive (though it is specifically designed to operate with HyperDrive) onto a 3M DC 2000 cartridge.

Users can back up an entire hard disk or individual files. If they have HyperDrive, they can also back up individual volumes. Backup takes about 2 minutes per megabyte of data, according to John Ison, General Computer's director of marketing. Users can instruct the computer to back up only files that have been altered since the last time data was backed up. Neither procedure is a background operation. The Mac cannot be used for anything else while files are being backed up.

General Computer also started shipping at the end of April its HyperCharger 020 accelerator board that effectively upgrades an SE into a Mac II. HyperCharger 020, which plugs directly into the SE's expansion slot, features a 16-Mhz 68020 microprocessor and 1 Mbyte of RAM. Options include an extra 3 Mbytes of memory and a 68881 floating-point coprocessor that increases the SE's speed 5 to 30 times in numerically intensive computations, according to General Computer.

The board includes an expansion port that allows users to install other hardware.

Hypercharger 020 is priced at $1,499 or at $1,699 with the floating-point coprocessor. On July 1 the price will increase to $1,899. ■

AST to release 20-Mbyte hard disk for SE, II

BY JIRI WEISS
MacWEEK Staff

IRVINE, Calif. — AST Research Inc. will ship starting in June a 20-Mbyte external hard disk for the Macintosh SE and II, and new software that allows users of the firm's TurboScan scanner to edit images at 300 dpi.

The new $1,195 drive, called fAST-20, has an average access time of 68 milliseconds and lets users chain up to seven Small Computer System Interface (SCSI) drives together.

Software included with the drive includes LaserSpeed, a print spooler from Think Technologies Inc. of Lexington, Mass., and DataVault, AST's package for archiving data.

DataVault lets users specify what kinds of files they want to back up onto the company's streaming tape backup or onto floppies, according to AST. For example, users can back up only those files that have been changed since the last backup procedure. DataVault stores all backedup files under a heading with the date and time of backup so that they can be easily identified after a system crash.

Though it is intended for the SE and II, fAST-20 will work with the Mac Plus or 512K.

AST's new $2,395 TurboScan includes, in addition to the scanner, a new graphics editor called SuperScan that lets users edit an entire screen image at the resolution of 300 dpi. Users can bring up three scanned images on the screen at the same time and choose which image they want to use.

Users can edit an image the size of an entire letter-sized page because SuperScan will automatically spool the data onto the hard disk. Files generated by SuperScan are compatible with Aldus Corp.'s PageMaker 2.0. SuperScan is also available as an upgrade for TurboScan users. ■

Users' ears are buzzing over noisy Macintosh SE fan

BY JIRI WEISS
MacWEEK Staff

SAN FRANCISCO — Macintosh SE users report distorted screens and a slower second (upper) floppy on the two-floppy model, but the fan's constant whir is driving some users up the wall, judging from the complaints on CompuServe and from interviews with users.

One user in Oslo, Norway, is measuring the noise with a decibel meter. Others are calling Apple to complain, threatening to connect a resistor to the fan to slow it down or replace it with a quieter off-the-shelf model.

Although users of souped-up Mac Pluses have been adding fans to prevent failure of heat-sensitive microprocessors, the SE is the first Macintosh computer to require a fan. The SE generates more heat because of its bigger power supply (a maximum of 100 watts vs. 60 watts for the Plus), its increased memory capacity and the heat generated by whatever fills its expansion slot.

Charles Oppenheimer, Apple's SE product manager, says that user sensitivity rather than design is to blame for the noise complaints. Nevertheless, he told a Boston Computer Society forum recently, "We have agents in Japan looking at quieter fans right now."

Oppenheimer says the complaint of a slower second floppy drive on the two-floppy model is justified. But as for noise, he says the SE is quieter than other popular Apple products, such as the HD20 SC external hard disk.

"Two wrongs don't make a right," says Linda Custer, a graduate student at the University of California, Berkeley. Custer, who earlier on CompuServe likened the SE to her vacuum cleaner, says she is thinking of putting a resistor on the fan's power supply to slow it down when she opens it up to put in more memory.

According to Tom Swain, a scientist at UC Berkeley's Lawrence Berkeley Laboratory, the resistor idea will not work because to disconnect the fan, users will have to cut perilously close to the circuit board on which the fan is mounted. Swain markets MacChimney, an alternate cooling system for the Mac Plus for those bothered by fan noise: a cardboard chimney that sits on top of the machine and makes it look like the Tin Man in "The Wizard of Oz." While MacChimney works fine for the Plus, ordinary convection probably will not be enough to cool the hotter, more powerful SE, Swain says.

Swain says that Apple did not spend enough time on fan design. It designed a squirrel cage fan, which looks like a hamster treadwheel on its side, with a motor from Toshiba, which makes more noise because it cuts the air at a faster speed than other types. Apple refuses to disclose any technical details of its design.

Kevin Douglas Baranski-Walker, a systems programmer at UC-Berkeley's computer facilities and communication department, is installing a $25 off-the-shelf whisper fan to see if it will reduce the noise. Baranski-Walker says he plans to test the SE's decibel levels in a sound chamber. He is not the first.

Lars Strand, manager of the sound and vibration department of Multiconsult A.S. in Oslo, Norway, clocked his SE with a hard disk at 42.5 decibels (dbA) — a level considered on the borderline for good listening. (dbA is a logarithmic scale weighted for the sensitivity of the human ear.) The SE level compared favorably to 46 to 47 dbA for an IBM PC with a 20-Mbyte hard disk. The tests were performed from the operator position with the Mac about 4 inches from a wall.

Oppenheimer warns that any attempt to tamper with the fan voids the warranty. ■

JOHN HERSHEY

Updated MicroPhone in the mail next week

BY ELINOR CRAIG
MacWEEK Staff

BERKELEY, Calif. — Software Ventures will ship an updated version of its powerful Macintosh telecommunications program, MicroPhone, June 1, said David Hindawi, company president.

Version 1.1 will cost $149, double the cost of the original version. However, this version will include Glue, by Montpelier, Vt.-based Solutions Inc., which costs $60 if bought alone. When purchased separately, Glue only has print capabilities. However, the MicroPhone 1.1 version allows the user to view as well as print the text or graphics that have been sent. Glue allows viewing and printing even if the receiver does not have the application in which the material was developed. Through "image saving," the user can receive, for example, a page layout without owning PageMaker.

Two new features make MicroPhone 1.1 the easiest and most powerful telecommunications program out today, according to Hindawi.

The bundling of Glue will appeal to the desktop-publishing market, Hindawi says, because it uses scripting, automating the process of sending material and allowing the user to send at a designated time without being present.

The other new feature of MicroPhone 1.1 is DEC connectivity. This provides improved VT 100 emulation, allowing a Mac to look and work like a VT 100 terminal.

Registered users will be notified of the upgrade by Software Ventures.

Unregistered users will have to send proof of purchase or the original disk to receive the upgrade. An upgrade without Glue will cost $10, and with Glue, $55. ■

Qume to release ScripTEN laser printer

SAN JOSE, Calif. — Qume Corp.'s ScripTEN laser printer will start shipping in the first two weeks of June, according to the company.

The ScripTEN printer incorporates Adobe Systems Inc.'s PostScript page-description language, which is included in more than 300 software packages.

The ScripTEN printer is designed for desktop publishing that supports the combination of text, graphics and scanned images on a given page, using the PostScript language.

The ScripTEN is intended for "People who know what they're looking for," said Qume representative Lisa Boughner.

The printer controller language is compatible with high-resolution printers usually found in print shops. Documents can be created on PCs, previewed on a ScripTEN printer and then set to a typesetter for final production.

Two versions of ScripTEN are available, the 2-Mbyte model for $4,795 or the 3-Mbyte model for $5,295. Either can support the IBM PC XT, AT and compatibles, or the Apple Macintosh 512K, Plus or Mac.

The PostScript mode provides 35 resident fonts in 11 families, along with enhanced user-defined graphics and the ability to include scanned images onto a page. ■

HP offers 38% discount on 9000 workstation line

FORT COLLINS, Colo. — In response to Sun Microsystem Inc.'s recent low-end workstation price cut, Hewlett- Packard has started shipping a $7,900 model for its HP 9000 line of workstations and is offering educational institutions a new 38 percent discount.

The Model 318 is a 16.5-Mhz 68020-based monochrome workstation packed with 4 Mbytes of RAM and a 68881 floating coprocessor targeted for engineers and designers .

The machine includes an HP-developed direct-memory-access controller chip that speeds up input and output by taking over part of that job from the microprocessor. A paged-memory management unit from Motorola allows for virtual memory and a 17-inch bit-mapped display with a resolution of 1,024 by 786 pixels.

HP is offering a configuration with an 80-Mbyte disk drive and a 60-Mbyte cartridge tape backup for $14,550.

The workstation runs on HP's version of AT&T's UNIX V.2 operating system, according to the company. ■

Abaton's MultiTalk extends AppleTalk's reach

PLEASANTON, Calif. — Abaton Technology Corp. is shipping a $695 serial port server that lets users on an Appletalk network share up to three serial devices, such as modems, scanners and plotters.

The server, called MultiTalk, includes three RS-232 serial ports and an RS-422 port for the connection to Appletalk.

Users can plug in MultiTalk anywhere on the Appletalk network and install it on each Mac by running a software program included with the unit.

A MultiTalk prompt, which appears automatically in applications that call for the use of devices connected to MultiTalk, allows AppleTalk users to select the appropriate device, according to a representative from Abaton.

Up to four MultiTalk units can be installed on any Appletalk network. ■

Apple UNIX to universities in June; wider distribution in August

BY JIRI WEISS
MacWEEK Staff

SAN FRANCISCO — Apple will begin shipping its UNIX operating system for the Macintosh II to universities and preferred customers this month, but will wait until August before beginning wider distribution, sources close to Apple's development effort say.

The new version of the UNIX operating system will reportedly give users true multitasking — the ability to run more than one application simultaneously, said Raymond K. Neff, assistant vice chancellor for information systems and technology at the University of California, Berkeley. And because the operating system allows more than a gigabyte of virtual memory, users will not have to worry about the size of their applications.

With virtual memory, a computer addresses all storage media, such as the hard disk, as if it were RAM, so that a program need not be in memory all at the same time. This means that users can run more programs than they have space for in RAM. There is a price if they do, however, because the constant swapping slows execution down. To run Macintosh applications, however, users will have to reboot with the Macintosh operating system.

A/UX combines AT&T's UNIX System V.2 and the Berkeley 4.2 BSD version. Thus, applications written for either operating system will run on the Mac II, according to Berkeley, Calif.-based UniSoft Corp., the software developer that helped Apple in the A/UX effort.

Apple increased the Mac II's connectivity options by including the Defense Department's TCP/IP protocol for connecting systems via the Ethernet network and Sun Microsystems Inc.'s Network File System (NFS). The added capabilities give users access to remote files accross a network.

A/UX will run only on Mac IIs equipped with the optional memory management chip, the Motorola 58881 PMMU, and at least 2 Mbytes of memory, though Apple recommends 4 Mbytes, according to the company.

The new operating system is an implementation of UNIX that Apple purposely made similar to what is available on Sun workstations, said a source who requested anonymity. So similar, in fact, that applications written for Sun workstations can be made to run on the Mac II in a matter of hours.

"It also means I can use the Mac II as a client interacting with a Sun 3 server."

Additional features are a self-repair utility that allows users to recover files from system crashes and an auto-configuration feature that recognizes any new hardware that may be added. "Such a feature is common in the PC world," one source said, "but it's something that nobody has done in the UNIX world."

While A/UX initially will require familiarity with UNIX commands, the inclusion of the Macintosh toolbox means users will recognize the Macintosh look in future programs.

Apple says it does not plan to sell the operating system separately but with the Mac II in various configurations or as an upgrade package with the memory management chip.

Prices for a Mac II with A/UX will range from the roughly $5,000 discounted price that U.C. Berkeley is paying to $10,000 or more with Apple's EtherTalk Interface Card and other hardware, the source said. ■

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Migent's Lighthouse package boasts multi-user capability

JOHN HERSHEY

BY TINA BACHEMIN
Special to MacWEEK

A desktop publishing package with multi-user capabilities from Migent Software Corp. will be shipping by mid-June.

The product, code named "Lighthouse," is being developed for the Incline Village, Nev.-based firm by Nova Software Development of Los Angeles.

Lighthouse boasts a combination of word-processing, graphics and page-layout features, but its key contribution to desktop publishing is multi-user capability, says David Orfao, Migent's CEO and head of its Apple Products Group.

"Our research found that in the corporate environment, people work in groups of four to 10 with desktop publishing," says Orfao.

According to Roger Bloxberg, Nova marketing manager, the application can be run from a single hard drive supporting the maximum number of nodes on an AppleTalk network. A number of users can work on the same page at the same time, but Lighthouse draws the line at simultaneous text editing, so users cannot work within the same paragraph.

"Thanks to AppleShare File Server, the door is open to developers to create the coding mechanism for multi-user capability," says Orfao. He says Lighthouse was recently previewed to investment people and is about 80 percent ready to go. "We are doing a trademark check on names for the product and hope to make a joint marketing annoucement with another company."

Lighthouse also is anticipated to be a breakaway product in terms of speed. "It is object-oriented, which conserves on how much storage space is needed to save a file," says Bloxberg. "Of course, quantifiably, it can only work as fast as the individuals operating it. But the network is very fast, and through AppleTalk, the multi-user capability can be teleconferenced."

In addition to its multi-user capabilities, Lighthouse will include graphics features, such as object locking, grouping and alignment, extensive drawing tools, 36 object patterns and custom rulers with measurements in metric and pica scales. According to Orfao, its word-processing module includes extensive search commands, a 26-entry glossary, numeric and scientific footnotes, automatic renumbering, a spell checker, thesaurus, automatic hyphenation and tabbing.

Orfao says Migent will aim Lighthouse at the same market now dominated by Seattle-based Aldus Corp.'s PageMaker. ■

New PageMaker gets mixed reaction

BY ELINOR CRAIG
Special to MacWEEK

The long-delayed PageMaker 2.0 from Aldus Corp. has been received with cheers as well as cries of disappointment.

Originally shipped on April 29, 175 of the copies, sent to "VIP customers," had a problem that caused the program to crash, taking files with it.

The problem was in the packaging, says Carolyn Bakamis, assistant marketing manager at the Seattle-based firm. "Everything has been rectified," she says, "and clean replacement copies were sent out within 24 hours."

Now that customers have the program in hand, reactions are mixed. The ability to change the size of a text column in an instant is a highlight, says John McWade, owner of PageLab. The Sacramento firm uses PageMaker 2.0 about 16 hours a day and has yet to find a bug. "Some of the techniques are hard to understand initially," says McWade, "but as far as I can tell, it works the way it was intended to."

On the other hand, many old Mac hands are feeling abandoned by the changes in the keyboard commands, which now resemble a PC structure — a result of Aldus working closely with Microsoft Corp. on this version. One beta test site user said the change from a Mac standard was a gross error in marketing. "It ignores the established (Mac) market while trying to create a new one." ■

Compugraphic typesetters can read PostScript files

BY JIRI WEISS
MacWEEK Staff

LONG BEACH, Calif. — Compugraphic Corp. announced last week at the Guttenberg Festival, a convention of printing and graphics trades here, a combination hardware and software system that translates PostScript files into the code that the company's typesetting machines understand.

The $2,495 PS Translator, which requires a Macintosh with at least 512 Kbytes of memory, consists of a software conversion program and a 5.25-inch disk drive for output on a disk that can then be read by the terminals attached to Compugraphic typesetting machines.

PS Translator will work with desktop-publishing programs that produce bit-mapped output and uses LaserPrep Version 3.1, according to Alfred Hamilton, Compugraphic's program manager. This excludes PageMaker Version 1.2, he says. Version 2.0 has yet to be tested.

The new product gives graphics capabilities to Compugraphic's MCS 8000 and MCS 8400 series typesetting machines for the first time. But because PS Translator is not a PostScript driver, graphics capabilities are limited to 72, 144 and 288 dots per inch. While this resolution is not as high as that achieved with a LaserWriter, the phototypesetting gives users better control, says Hamilton. "You don't have to deal with toner splash … the dot goes down exactly where you put it."

PS Translator, from Mumford Microsystems of Summerland, Calif., gives Mac users another outlet for their output, says Arlene Karsh, an industry analyst with the market research firm CAP International. Previously, only typesetting machines from Linotype Corp. could be used for output directly from disk.

Because much of Compugraphic's installed base of about 30,000 typesetting machines are in typesetting businesses, Mac users may see more typesetting shops offering to output directly from a Mac disk.

Typesetters also will be able to make font sets available on a floppy disk, allowing users to take advantage of the full range of Compugraphic's 1,700 fonts, Hamilton says.

Compugraphic plans to ship PS Translator this summer, perhaps as early as June. ■

Big crowd turns out for desktop-publishing show

BY ELINOR CRAIG
Special to MacWEEK

The first Desktop Publishing Exhibition/Conference of 1987 attracted almost 50 percent more than the expected turnout of visitors, in spite of the low number of exhibitors, according to Joanne Mohr, event services manager for Online International Inc. of New York, the organizer.

Online had expected 3,000 people for the three days of the conference at Moscone Center in San Francisco May 11-13. However, the turnstyle had counted 4,300 people by the end of the second day.

A forum for desktop-publishing hardware and software, the exhibition attracted mom-and-pop print shops responding to customer demands for desktop-publishing capabilities, as well as representatives from such companies as Ford and Chevron who were curious how the new technology fits into the corporate structure, according to exhibitors. Publishers, printers and educational institutions represented the largest portion of visitors, they said.

"It was an equal mix of PC and Mac users," said Dean Anson, technical support supervisor from Aldus Corp. of Seattle, Wash., one of the exhibitors. "They had done their homework, but they were still making decisions about what hardware to buy."

Another Aldus representative, Avrill Curdy, trade show manager, was surprised at the PC representation. "Where is Apple (Computer Inc.)? It is their back yard," she said. "(Aldus) and Xerox are the only big players."

Observers called the show lopsided because only a sketchy representation of the available desktop-publishing software and hardware was offered.

Aldus demonstrated its PageMaker 2.0 for the Mac and software for the IBM PC. The demonstrations included a variety of PageMaker-compatible hardware solutions, including printer, scanner, large-screen monitors and AT-compatible PCs.

Xerox presented its package solution, including hardware and software, for desktop publishing.

One of the exhibition highlights was the introduction of Qume's new laser printer, the ScripTEN, which operates in the PostScript mode and as an emulation of the Hewlett-Packard LaserJet Plus printer, allowing users to print files from programs that do not have PostScript drivers.

The printer has the ability to produce a consistent black surface that is not possible with the Apple LaserWriter. It starts with a black surface and erases to the image rather than starting with a white surface and adding black. The 2-Mbyte model lists at $4,795 and the 3-Mbyte lists at $5,295, but neither will be available until the end of June, Qume says.

Despite the presence of desktop-publishing innovators, the conference was not able to accommodate the number of press and public who wanted to attend. ■

BRIAN K. JOHNSON

Connecting a Macintosh workstation to a a CRAY X-MP /48 gives the Mac supercomputer capabili-

A bird! A plane! No, it's SuperMac!

BY RICHARD HALSTEAD

Special to MacWEEK

SANTA CLARA, Calif. — Researchers at the University of Illinois at Urbana-Champaign are aiming at turning the plain, old Macintosh into a SuperMacintosh.

By improving connectivity between supercomputers and microcomputer workstations such as the Macintosh and those made by companies such as Sun Microsystems Inc. of Mountain View, Calif., and Armonk, N.Y.-based IBM Corp., academics believe they can more efficiently tap their scarce supercomputing resources.

Speaking at the Second International Conference on Supercomputing in early May in Santa Clara, Calif., Larry Smarr, director of the National Center for Supercomputing Applications (NCSA) at the University of Illinois, emphasized the need for integrating microcomputers with supercomputers that can calculate 30 to 10,000 times faster than their slower cousins. "There has been an explosion of use at the national centers," Smarr said, referring to the five National Science Foundation (NSF)-sponsored national sites where supercomputers are used for non-commercial research.

"I don't know of any computational scientist who will say he has enough (super) computer time," said John Connolly, NSF director of advanced scientific computing, who also spoke at the conference.

Instead of adding expensive new supercomputers — the cheapest of which costs about $4 million — Smarr stressed the effectiveness of better utilizing existing supercomputer resources through microcomputers.

Much of a scientist's work — editing and debugging software and visualizing data through graphics — requires supercomputer power. These tasks can be efficiently handled by microcomputers, thus clearing time for new users of the supercomputer, Smarr said.

Opening his talk with a slide of a Mac Plus connected to a CRAY X-MP/48 (one of the world's fastest computers), Smarr said, referring to PCs, "This is really what the world is like today. Everything else but the supercomputer — that's where the action is."

Smarr showed a slide of NCSA's CRAY Finder project, which will add CRAY and VAX icons to the Macintosh screen.

"The supercomputer will look and act like any other Macintosh disk drive and application, allowing the transfer of files just by moving an icon," says Brand Fortner, who heads the Mac portion of the NCSA project. It will probably be another year, however, before the CRAY Finder project is completed, Fortner says

But while instantaneous file serving between Macintoshes and supercomputers is not yet perfect, an integrated workstation environment has been implemented on the Mac Plus using commercially available software.

University of Illinois researchers say the Macintosh's workstation includes good terminal emulation and communication with the CRAY X-MP/48, manipulation of information as text or graphics, and easy transfer of research data between the CRAY X-MP/48 and application programs on the Mac.

The NCSA project has already eliminated the bottleneck between the supercomputer and microcomputer, since personal computers typically access other computers through a modem.

The 1,200 bits per second of information transferred by modem, however, is very slow for large amounts of data. NCSA's new Telnet, a terminal emulator, permits use of AppleTalk for Macintosh Plus, which is rated at 230,000 bits per second, and Ethernet, rated at 10 million bits per second, for the IBM PC. (Work is under way to make the Mac II function on Ethernet.)

"The NCSA Telnet programs let the IBM PCs and Apple Macintoshes make use of these high-speed local-area networks to access the supercomputer," says Tim Krauskopf, a programmer in NSCA's workstation group. "NCSA Telnet supports terminal emulation and file transfer, allowing the scientist to work on the supercomputer and move files between the personal computer and the supercomputer."

The NCSA Telnet for the Macintosh uses an AppleTalk to Ethernet gateway manufactured by Kinetics Inc. of San Diego. NCSA Telnet, in turn, uses TCP/IP, or Transmission Control Protocol/Internet Protocol, a pair of protocols that form the foundation for most networking.

Created in the 1970s by the Defense Department for use on its private network, ARPANET, TCP/IP has gained rapid acceptance in the academic and commercial communities. The NSF's national network, which connects campuses without supercomputers to universities that have them, uses TCP/IP as its foundation. Among its many strengths, TCP/IP connects easily with computers using the UNIX operating system.

The NCSA Telnet for the Macintosh also includes software that emulates the graphic function of the Tektronix 4010. That is important for scientists because the Tektronix 4010 is commonly used by the CRAY supercomputer to display scientific data.

Apple has donated $350,000 worth of equipment, including 80 Macs, to the NCSA project. Nevertheless, the University of Illinois researchers have only recently received their first Macintosh II. It is being used to develop NCSA Imagetool, which allows high-quality color graphics to be downloaded from the supercomputer and then flipped through like a movie. Contour and line plots will be available for Macs without color capability, Fortner said.

The NCSA project also includes efforts to integrate commercial software with communications and graphics software developed at the supercomputing center. The objective is to allow scientists to combine their favorite programs with the high-speed of a supercomputer like the CRAY X-MP/48.

"There are more software tools already available on the Macintosh than there will ever be on the CRAY," Smarr said. "That's because the installed base of personal computers is in the tens of millions compared to a few hundred CRAYs and the installed base drives software."

The commercial software NCSA is attempting to integrate at the moment includes Microsoft Corp.'s Word 3.0 for word processing, Microsoft Excel for spreadsheet use, Peripherals Computers & Supplies Inc.'s VersaTerm Professional for remote terminal access, Cricket Software's CricketGraph for plotting and Apple's MacDraw for graphics.

"The reason we're putting so much effort into the workstations is that this is where a scientist spends most of his or her time," Fortner said. "At a workstation with commercial software, the scientist does word processing, graphing and back-of-the-envelope calculations."

NCSA researchers are also working with Sun workstations and IBM PC/ATs. Both Sun and IBM have each contributed $500,000 worth of equipment to the project. But the Macintosh remains particularly attractive for use as a workstation because of its consistent user interface among programs, ease of use, low cost, cut and paste data movement capability and high-quality output devices, said Larry White, NSCA's manager of workstation development.

Though the Mac is not multitasking, an inexpensive Apple utility — Switcher — provides mobility between applications, simulating a multitasking environment. A typical user session might take place as follows:

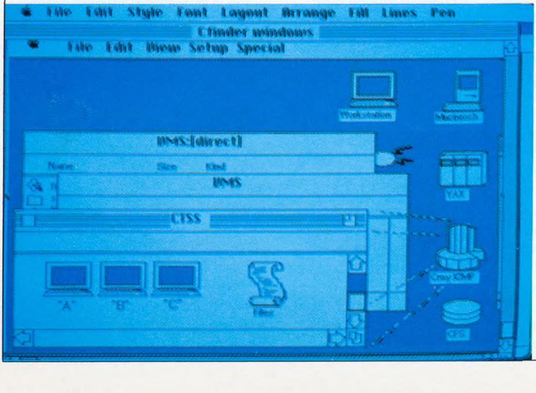
A user of the NCSA system connects to the CRAY X-MP/48 using VersaTerm Professional, a communications software package. Supercomputing output is captured in VersaTerm Pro by highlighting text. The text is captured, highlighted and copied to the Clipboard using Copy Table in the Edit menu. Via Switcher, the application program CricketGraph is activated and the information pasted into a spreadsheet. Next, the type of graphic desired is selected from the Choose Graph menu, and the information graphed instantly. The completed graphic is copied to the Clipboard and pasted into MacDraw for fine-tuning.

Research into improving the connectivity between supercomputers and personal computers, however, has only just begun. Stanford University in Palo Alto, Calif.; Carnegie-Mellon in Pittsburgh, Pa.; the University of California at Berkeley and at San Diego; and many high-tech firms are engaged in work on personal computer/supercomputer connectivity.

Apple is doing a little of its own hands-on research. The company bought a $14 million CRAY X-MP/48 last year for new product design, and it uses Telnet and a similar terminal emulator sold by Pacer Software Inc. of La Jolla, Calif., says Kent Koeninger, an Apple designer and self-proclaimed CRAY evangelist.

Koeninger says that by using Pacer's PC-Link, Macintosh users can gain remote disk-serving capability. This means that the equivalent of a hard disk can be transferred from a CRAY to a Macintosh. Says Koeninger: "It turns the CRAY into a $15 million enhancement to the Mac." ■

The CRAY icon shows up on the Mac screen when the two are connected.



BRIAN K. JOHNSON

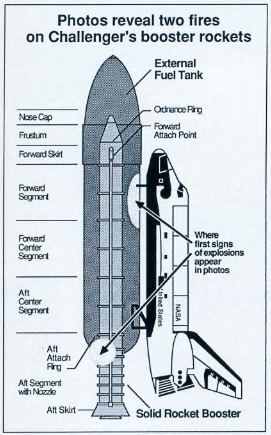
Wire service offers Mac graphics

BY MARY FRIEDLAND
MacWEEK Staff

Imagine dialing into a bulletin board full of pictures. On the screen of a Macintosh appears a diagram of the Challenger space shuttle exploding, a chart dramatizing the eroding dollar and a map of Alaska's hidden oil reserves.

Four years ago, Roger Fidler, director of the graphics network for the Knight-Ridder newspaper chain, envisioned that bulletin board. When Apple produced an engine for his idea — the Macintosh computer — he launched the nation's first graphics database.

Fidler is a quiet man. He does not proselytize about on-line graphics; he hooks you with his ingenious ideas.



FRANK SORK/Knight-Ridder Graphics Network

Graphics depicting the Challenger space shuttle disaster were among the first offered by PressLink.

Fidler was working for Knight-Ridder's ViewTron, a consumer information service that transmitted over telephones and televisions, when he started hunting for a graphics computer. That was 1979. Four years later, Fidler switched to Knight-Ridder's newspaper graphics division, still looking for a graphics computer. He wanted his 32 subscribing newspapers, many lacking skilled staff artists, to be able to share art. Why not send graphics wires, just as they sent news wires, he wondered.

The problem was the technology. Apple's Lisa hooked to a Compugraphic typesetter could produce graphics, but the system was too costly for newspapers, and its output was poor.

In 1984, Fidler dabbled with a graphics-by-mail service. By mid-1985, he was creating the graphics on a Macintosh and a LaserWriter.

"I am not a techie," Fidler prefaces his introduction to the Mac world. "My approach to computers is synergetic. I use them as tools."

The missing tool was a connection to subscribers. In the summer of 1985, Fidler field-tested Applelink, an icon-based telecommunications system that proved excellent for computer novices. A few months later, he contracted with General Electric Information Services, a telecommunications company, to customize the system for newspapers.

Meanwhile, Macintoshes were creeping into newspapers' art rooms. Fidler says, "The Macintosh and LaserWriter, with software and a hard disk, entered the market for less than $10,000. And output was very good."

Art editors envisioned a panacea for the demands of fast-breaking news graphics and original features art. Most were disappointed.

"For a first-time user, the (Macintosh) system is hard to use. You learn through trial and error. Newspaper artists, under the gun to produce, didn't have time to experiment," Fidler says.

By January 1986, Fidler had a finished product: PressLink. PressLink offered late-breaking news graphics and a rapidly expanding bank of general-purpose illustrations, all formatted for newspapers. To test the product, Fidler sent three artists to cover the Challenger liftoff Jan. 28. The spacecraft exploded. The artists depicted the disaster on Macintoshes with MacDraw, demonstrating that they could cover news on deadline. The six subscribers ran the picture.

Three months later, Fidler had moved his operation from Miami to Washington and was serving 21 subscribers. He planned to start daily service in June. But on April 28, a nuclear reactor at a Chernobyl, Soviet Union, power plant exploded. PressLink's dramatic diagrams of the disaster were unrivaled. Subscribers demanded more, and Fidler jumped immediately into daily news graphics.

Today, more than 60 newspapers subscribe to PressLink, including papers outside the Knight-Ridder umbrella. An informal survey by Fidler indicated that the vast majority of newspapers with circulation greater than 50,000 do art on Macs.

Fidler describes the appeal of packaged graphics: "It's much easier to modify a drawing than to create one from scratch. With PressLink, an artist can pick up a graphic and make a few changes. Encouraged by attractive results, artists are inspired to make good graphics look even better."

PressLink is a network. Subscribers are linked via electronic mail; many contribute graphics. Fidler says the network gets artists talking. "At first we (PressLink artists) felt very isolated. Now a growing core of artists is using the system and communicating their experiences."

The advent of the Mac II may mature Fidler's fledgling product. Fidler says he sees the limitations of the current Macintoshes about to dissolve. The most obvious advances in the Mac II, according to Fidler, are speed enhancements and better viewing on larger color monitors. Sophisticated picture editing, such as three-dimensional rotation, should be easy. As a greater variety of graphics can be output to a LaserWriter, production costs will fall. Also, file sharing will increase, both between editorial and art departments and throughout the network's subscribers.

COURTESY SAN JOSE MERCURY NEWS

Roger Fidler, director of the graphics network for the Knight-Ridder newspaper chain.

What is left for Fidler's wish list?

Maps. Right now PressLink artists draw maps freehand. Fidler says he would like to see mapping programs that contain core maps and editing tools. The U.S. government has a large store of maps and charts, largely inaccessible to newspapers because government systems are standardized on IBM. Fidler says he hopes that file compatibility features in the new Macs will enable him to tap those reserves.

Fidler stands on the threshold of what may become the standard distribution procedure for newspaper graphics. Associated Press (AP) executives watched Fidler set PressLink afloat. AP sends graphics to subscribers over laser-photo machines, the transmission device used for photographs. Output is poor, and the graphics cannot be modified.

In December, AP equipped artists with Macintoshes. On March 23 it launched AP Access, a graphics bulletin board of MacDraw art. Early this month, AP announced a Macintosh broadcast network that will send MacDraw graphics by satellite directly into subscribers' Macintoshes. AP set up the same format and type fonts as PressLink, paving the way for eventual compatibility between the systems.

"I'm glad to see people copying what we've done," says Fidler. "It validates our efforts and encourages standardization."

Fidler sits on an informal standards committee with representatives of the Wall Street Journal, New York Times and Washington Post. The committee hopes to provide hardware and software guidelines for graphics transmission and to insure compatibility of services.

Fidler also is taking his network abroad. In Canada, several publications bought into PressLink. In Australia, a sample graphics board is being test-marketed in Perth. Several European papers also are interested. ■

Graphics on deadline: How PressLink works

Last month in Palm Bay, Fla., a crazed sniper went on a shooting spree. As reporters clustered at the scene of the crime, Miami Herald graphics reporter Dan Clifford lugged a Macintosh computer into a hotel room above. Clifford surveyed the death scene, and snapped a few photos. Then, with the Macintosh, MacDraw and a fistful of snapshots, he constructed sketches of the killer's rampage.

Clifford transmitted the sketches to Macintoshes in the Herald's art room. There, graphics editors formed a composite drawing and sent it to the PressLink bulletin board. As details of the story broke, 60 newspapers had a bonus: a bird's-eye drawing of the scene.

PressLink, the graphics arm of the Knight-Ridder news wire, distributes MacDraw art through a telecommunications network. The system operates on communications software from Apple Computer Inc. and General Electric Information Services.

The core of PressLink is an electronic bulletin board of daily graphics for news and features. The service also includes a graphics archive and a base-map library. Art editors at subscribing newspapers call up graphics on their Macintoshes and customize them.

PressLink connects subscribers via electronic mail. Artists and editors share graphics and artistic strategies. Many subscribers contribute original graphics to the board, earning discounts for their papers and the personal recognition of a byline.

PressLink will not replace newspaper artists, but it can enhance their productivity, the quality of their work and their job satisfaction.

Don Melton, computer graphics specialist at the San Jose Mercury News and a regular contributor to PressLink, says he will "never go back to the drawing board again." ■
—*By Mary Friedland*

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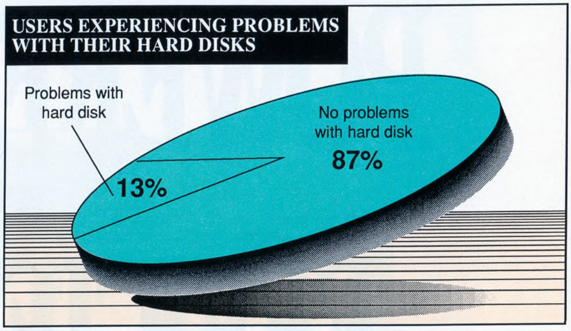
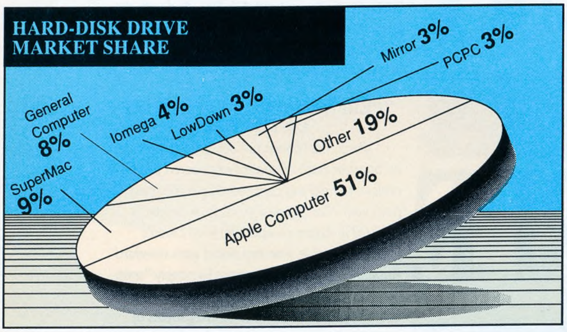
Focus: Hard-disk drives

Eight of every 10 Macintosh systems in large organizations are equipped with hard-disk drives, according to a recent MacWEEK survey conducted by Creative Strategies Research of Santa Clara, Calif. (See chart on front cover.)

When asked if they had experienced any reliability problems with their hard-disk drive, 87 percent of the respondents said no, while 13 percent said yes. Among Apple hard-disk users, 4 percent had experienced problems. Responses to this question about other brands proved too small to be statistically reliable.


USERS EXPERIENCING PROBLEMS WITH THEIR HARD DISKS


HARD-DISK DRIVE MARKET SHARE

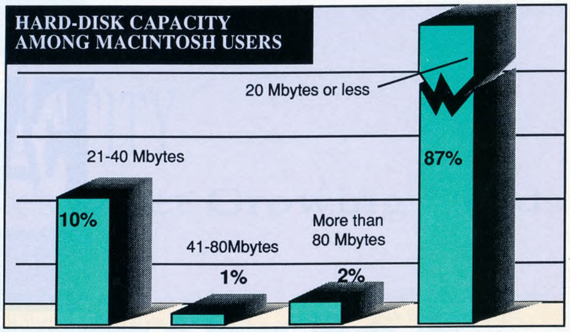
Apple takes large share of hard-disk market

Hard disk drives marketed by Apple are used by 128 of the 304 respondents, representing a 51-percent market share. Mountain View, Calif.-based SuperMac Technology's external DataFrame drives are used in 9 percent of the systems, and Cambridge, Mass.-based General Computer's external and internal HyperDrives are used in 8 percent of all systems. Five other hard-disk drive manufacturers were mentioned by 4 percent or fewer of respondents, including Iomega Corp. of Roy, Utah; LoDown of Scotts Valley, Calif.; Mirror Technologies Inc. of Hugo, Minn; Personal Computer Peripherals Corp. of Tampa, Fla.; and MDIdeas of Foster City, Calif.

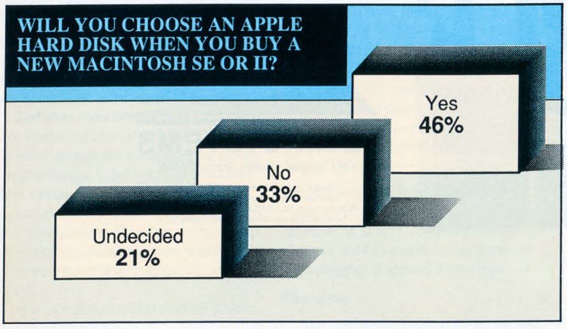
Large organizations favor 20-Mbyte capacity

The average capacity of the hard-disk drives used by large-organization respondents is 35 Mbytes. But the overwhelming majority of hard-disk drives — 87 percent — are in the 20-Mbyte or less category, with virtually all of these having 20 Mbytes of storage.

The surge in interest in large networking systems manifests itself in the relatively high number of 80-Mbyte and higher based systems mentioned.


HARD-DISK CAPACITY AMONG MACINTOSH USERS

LASLO VESPREMI


WILL YOU CHOOSE AN APPLE HARD DISK WHEN YOU BUY A NEW MACINTOSH SE OR II?

Most SE, II buyers would choose Apple drives

For the first time, the new Macintosh SE and Macintosh II offer Macintosh buyers the option of purchasing a built-in Apple hard-disk drive. When asked if, upon buying an SE or II, they would specify an Apple-brand hard-disk drive or choose a third-party product, respondents were divided. The majority, 46 percent, would buy an Apple disk drive, while 33 percent would not and 21 percent were undecided.

The MarketWEEK survey is conducted exclusively for MacWEEK by Creative Strategies Research, a high-technology research and consulting firm based in Santa Clara, Calif. For this survey, 510 U.S. corporate and other volume users were randomly selected from the MacWEEK subscriber database. Respondents were surveyed by telephone during April and 304 usable questionnaires were obtained, resulting in a 60-percent response rate. The industry and geographical distribution reflected in the sampling are representative of general U.S. company demographics.

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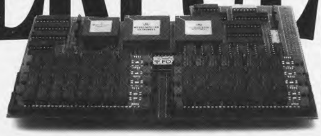

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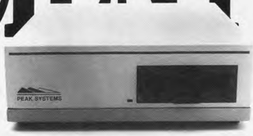

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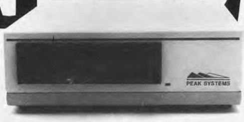

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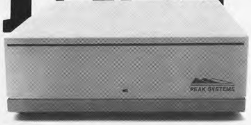

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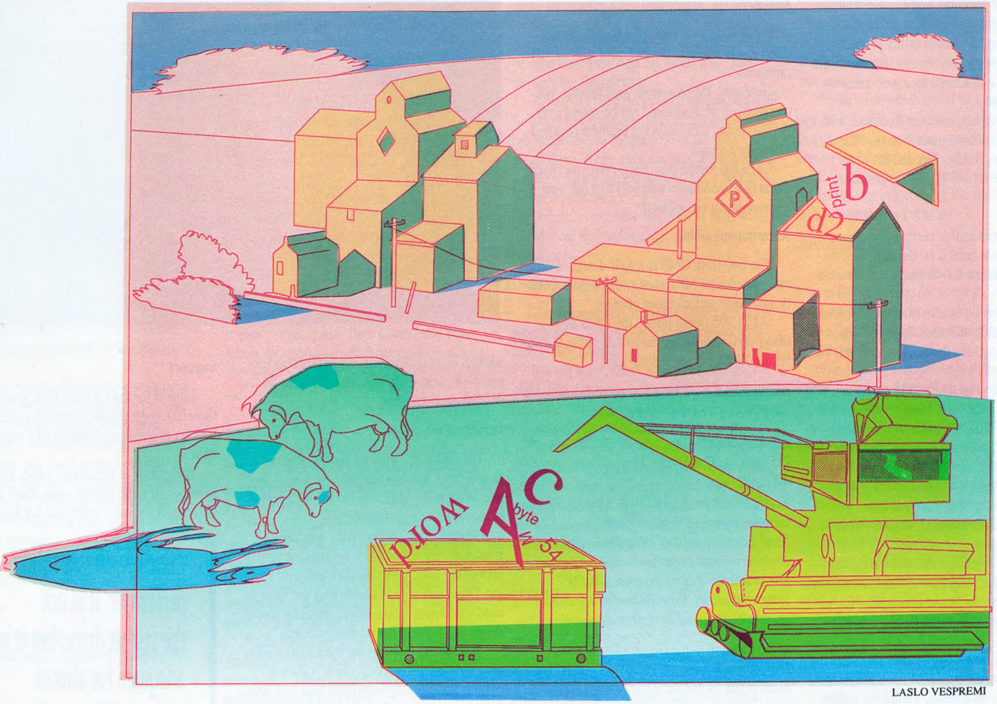

LASLO VESPREMI

EXPANDING STORAGE CAPACITY

Bigger, Faster Hard Drives Meet Growing Needs

Not long ago, Macintosh owners could only look on with envy as colleagues began to add fast and spacious hard disks to their MS-DOS machines. The first external hard drives for the Mac had to use the slow serial ports and required elaborate partitioning schemes to avoid overloading the Finder. Internal hard drives were costly and difficult to engineer for a machine Apple had designed to stay closed.

But when Apple introduced its Hierarchical File System and adopted the Small Computer Systems Interface (SCSI) standard, the picture began to change. Dozens of SCSI drives have been introduced, with ever larger capacities, faster access times, quieter operation and lower per-megabyte costs. The drives reviewed here — without exception impressive products — represent a new plateau in speed, size and ease of use.

(For an explanation of MacWEEK's rating system, see Page 16.)

CMS S40

CMS Enhancements Inc. ☆ ☆ ☆
1372 Valencia Ave., Tustin, Calif. 92680
(714) 259-9555
$1,150 (street price); **$1,495** (list price)

The S40, a new entrant into the Mac hard-drive market, offers performance comparable to better known products at a significantly lower price. We encountered a few small problems, but the drive is fast, quiet and rugged.

The S40 from CMS Enhancements Inc. of Tustin, Calif., is a lunch box-shaped, external 40-Mbyte SCSI drive. It provides excellent performance and easy portability, but it also has some annoying quirks and design flaws.

Ease of use

The S40 comes complete with the required cable, and like most of the new-generation SCSI drives, it is easy to use, but it has some features that may confuse even experienced users.

A minor irritation is a hyperactive yellow LED on the front of the drive. It lights up not only when the S40 is accessed, but whenever there is activity on any SCSI device that may be attached to the same Macintosh.

More seriously, CMS has chosen inconvenient solutions to the problems that arise when several SCSI devices are daisychained. Setting the SCSI address for the S40 requires configuring a series of DIP switches on the rear of the cabinet. The drive would be much easier to use if the address could be changed through software, as in the HyperDrive FX/40 or the SuperMac DataFrames, or if the current address were displayed on the switch, as in the Jasmine drives. When more than two SCSI devices are installed, the CMS design requires a technician to remove some small plugs called terminating resistors from inside the drive. In contrast, Apple's HD 20SC uses a plug-in terminator block that is easy to install and remove.Several helpful utilities are provided with the S40. The "initializer" software is very complete and includes software for testing the drive. The initializer also includes an identification search feature that scans the SCSI bus and then lists the devices found at each address. The software even allows the user to choose which of a number of icons will appear on the Macintosh desktop when the S40 is mounted. For backing up, finding files and recovering data from corrupted disks, CMS supplies the serviceable, if unexceptional, utilities now distributed free on Apple's system software disks.

Construction and design

Inside the S40, the electronics and drive are

Continued on next page.

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neatly arranged and seem carefully engineered. The most noticeable feature of the product is its distinctive shape — very similar to some of the lunch boxes manufactured by a well-known picnicware firm.

The case is sturdy and well-designed, with a handle that folds conveniently into the frame when not in use. Rubber feet and the squat shape make the drive virtually tip-proof.

Performance

The most outstanding performance feature of the S40 is how quiet it is. Because the cabinet has been designed with many vents, no fan is required.

The S40 is much quieter than the Macintosh SE. We could only tell when the drive was in operation by watching the activity indicator on the front panel.

With regard to speed, the S40 performs more than adequately. In writing 5,000 records to an OMNIS 3 file, it was faster than most of the 20-Mbyte drives and equal in speed to most of the 40-Mbyte drives tested. When writing information from a RAM disk to the S40, the S40's data transfer rates matched those of the speedy DataFrame XP40 from SuperMac Technologies.

The initializing software does have a bug — one that cost us a great deal of time. During the initializing operation, error messages are displayed on the left-hand side of the Macintosh's screen.

Sometimes, however, the error messages are printed on the black border of the window and cannot be read. As a result, we did not realize that the drive had failed the initialization.

Documentation

The short booklet that serves as the drive's manual is informative but incomplete and, in one case, confusing.

The manual describes the operation of several drive units marketed by CMS, but it does not indicate how to tell which model the reader is using.

Some identifying details and a few pictures would be a big improvement. So would the addition of an index, a table of contents and a troubleshooting section. All in all, the documentation is really not up to the standards that are expected from a $1,495 product.

Support

We have had several opportunities to call CMS and check with the technical staff to solve problems.

Generally, the responses were helpful, but one problem we had could not be solved over the phone and ultimately the problem required a hardware repair.

CMS has joined other hard-drive manufacturers in extending its warranty to a full year — a commitment we applaud.

Recommendations

The S40 from CMS is a well-designed drive that provides 40 Mbytes of storage, good quality, low noise and adequate utilities.

At $1,495 (retail price), the CMS S40 offers performance similar to that of the DateFrame XP40, for about $400 less.

PAUL MORRELL

HyperDrive FX/40

General Computer Co. ☆ ☆ ☆ ☆

215 First St., Cambridge, Mass. 02142
(617) 492-5500

$1,399 (street price); **$1,799** (list price)

General Computer's latest hard disk continues the company's tradition of solid engineering and exceptional support software. The unusually shaped external drive is somewhat pricey, especially with a warranty of only 90 days, but it is fast and reliable.

In the tradition of the General Computer HyperDrive family, the FX/40 is a good drive made better by excellent utility software.

Ease of use

The HyperDrive FX/40, from Cambridge, Mass.-based General Computer, is ready to use right out of the box, but the user will need to glance through the manual to learn how to connect the external SCSI terminator. This may seem inconvenient compared to drives that have built-in terminators, but it is an advantage when additional drives are used in conjunction with the FX/40. An external connector makes it easy to see what configuration a drive is in without opening the case.

The FX/40 uses software to set the SCSI address for the drive. This method is easier than opening the case and setting jumper wires, but there is no external way to see what the address is set at. This is a minor problem for users who frequently use different SCSI drives daisychained together.

Performance

The FX/40 is a solid performer. It is not the fastest drive, but it is adequate for almost any use. What really improves the FX/40's performance is its superb software.

General Computer provides a number of good software applications for backing up data, encrypting files, verifying data and print spooling. Other software available with the drive is used for formatting the drive, installing a new driver and parking the read/write heads.

The backup software for the FX/40 works very well and is reasonably fast. It includes options for choosing individual files or folders to be backed up, or the user can back up only files changed since the previous backup session.

The security software will encrypt a file so that no one can read it, even if they look at the data as it is written on the disk. Decrypting the file is easily done with a couple of clicks of the mouse.

The FX/40 comes with two print spoolers, an ImageWriter spooler and a LaserWriter spooler. Both spoolers, which work only with the HyperDrive series drives, make printing about 35 percent faster.

Design and construction

The FX/40 is a well-built hard drive. The case is made of a strong plastic with an unusual tapered shape. However, the built-in handle is a little small for carrying the drive safely.

The FX/40 is also well-constructed internally. It uses high-quality components and has excellent workmanship.

The fan used to cool the drive is about as noisy as a Macintosh SE, but it is not loud enough to be a problem for most areas where people are busily working.

Documentation

The FX/40 comes with two small manuals that document the drive's operation. Both are made of high-quality materials and are well-written. One describes how to use the manager software for formatting the drive, and the other contains general operating information. The second manual describes the function and use of the software that comes with the FX/40.

Support

Support for the FX/40 is both good and bad. General Computer has a network around the country of authorized dealers who repair hard drives.

The quality of the service varies from dealer to dealer. In some remote areas, there may not be a dealer for many miles, yet we have found General Computer unwilling to provide assistance from its main facilities in Massachusetts. The customer must work through the "local" dealer. Buyers who demand quality service should check out the General Computer dealers in their area before buying.

> "The FX/40 is a solid performer. It is not the fastest drive, but it is adequate for almost any use. What really improves its performance is its superb software."

Telephone support from General Computer is very good most of the time. We called with a real problem with an FX/20. The technician was very helpful and gave us a number of suggestions that should have worked. Unfortunately, they did not, and our problem stumped the technician. We were promised a return call with a solution, but it never came.

General Computer offers a 90-day warranty for its drives. We feel a company of General Computer's size should be able to offer a longer warranty.

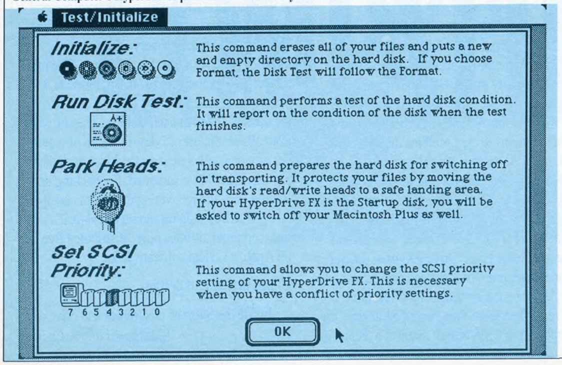
The trend among hard-drive vendors is to provide warranties lasting one year. This is a more reasonable period of time for electronic components.

Recommendations

The FX/40 is a reliable and well-conceived drive. The software that comes with the FX/40 is a valuable addition to the drive.

Overall, we think users will like the FX/40. We strongly recommend it.

General Computer's HyperDrives provide excellent utility software.



Initialize: This command erases all of your files and puts a new and empty directory on the hard disk. If you choose Format, the Disk Test will follow the Format.

Run Disk Test: This command performs a test of the hard disk condition. It will report on the condition of the disk when the test finishes.

Park Heads: This command prepares the hard disk for switching off or transporting. It protects your files by moving the hard disk's read/write heads to a safe landing area. If your HyperDrive FX is the Startup disk, you will be asked to switch off your Macintosh Plus as well.

Set SCSI Priority: This command allows you to change the SCSI priority setting of your HyperDrive FX. This is necessary when you have a conflict of priority settings.

Continued from previous page.

Direct Drive 20 and 80

Jasmine Computer Systems ☆☆☆☆
555 De Haro St., San Francisco, Calif. 94107;
(415) 621-4339
20: **$579** (list price); 80: **$1,380** (list price)

Jasmine Computer Systems has stirred up the Mac SCSI-drive marketplace by offering these speedy drives at bargain prices. Though short on utility software, they are well-engineered units. The 80-Mbyte unit is a bargain for those with large storage needs.

The Direct Drive series of SCSI hard drives from Jasmine Computer Systems — 20-, 40- and 80-Mbyte models — is without doubt one of the best values available for the Macintosh today.

The San Francisco-based firm's ads have created something of a sensation in the Mac community, and we have received many inquiries about the quality and price of these drives. People just don't understand how a company can offer an 80-Mbyte drive for less than $1,400 or a 20-Mbyte drive for approximately $600. Many fear they will be buying inferior equipment.

But our evaluation indicates that Jasmine's Direct Drives are excellent.

Ease of use

The Jasmine drives are easy to set up and operate. Installation consists of plugging the drive into the wall and connecting the SCSI cable to the back of the drive and to the Macintosh. The drive comes formatted and ready to use. The only thing that may cause a small delay is backing up or deleting the 9 Mbytes of public domain and shareware software that come on every drive. (We strongly recommend that you save this treasure-trove. Someday you are sure to want one of the invaluable utilities, desk accessories or other gems it includes.)

> "Jasmine did not cut any corners in design and construction ... Only the price is lower than the competition's."

Connecting multiple SCSI drives to a single Macintosh requires some hardware adjustments that are cumbersome on many hard drives, but Jasmine has made the job easy on its Direct Drives.

Changing the SCSI address number is simple; just push a small switch on the rear of the drive. Adjusting the terminators — small plugs that must be removed when multiple drives are connected — is almost as simple. The terminators are built in, but removing two screws and taking a small plate off the bottom of the drive brings them into view.

Performance

Both Direct Drives performed well in simple benchmark tests, although the Direct Drive 80 was significantly faster than the 20-Mbyte version in one test. The Direct Drive 80 performed comparably with the Dataframe XP-40 in a test using OMNIS 3 Plus to write 7,000 records to a file. According to Jasmine, the average access time for the 80-Mbyte model is an astonishing 26 milliseconds.

Besides the shareware collection, the Direct Drives come with a minimal amount of utility software on the 800-Kbyte floppy disk that comes with the units. Both drives have programs for mounting and formatting the drive, checking the SCSI address and repairing damaged disks.

The Direct Drive 20 also includes software for parking the heads to protect the internal drive from damage when moving it. (The 80-Mbyte model does not need special software. It automatically parks its heads when the power is turned off.)

The repair software, Disk First Aid, is a straightforward program that often makes it possible to recover corrupted files, though it lacks the capabilities of some commercial file-management software. (Disk First Aid is distributed free with the new Mac system release.)

Neither Jasmine drive comes with software for backing up the hard disk to floppy disks or tape drives. The user must choose appropriate software from a third party.

Overall, the drives perform well. The formatting software worked correctly, and we had no problem using the drive with other SCSI drives. The drives always worked reliably during weeks of use.

Design and construction

The Direct Drive 20 uses a Seagate 225N, while its big brother, the Disk Drive 80, uses a Quantum Q280 drive mechanism. Both versions of the Direct Drive are enclosed in a sturdy metal case that provides protection from damage during transport, but the metal cases make the drives considerably heavier than plastic-cased drives. Users who carry a Macintosh around very much should consider this.

The drives are designed to fit under the Mac. The Direct Drive 20 is 2.4 inches high, and the 80 is about 2.7 inches high. The drives reviewed for this article were the old Macintosh beige color, which clashes with the platinum of the new Macs. Jasmine indicates, however, that the platinum color is now available.

The Direct Drives provide two surge-protected power outlets on the drive's back panel. These outlets are switched on or off with the Direct Drive's On/Off switch. Plugging the Macintosh into the Direct Drive both frees up a wall outlet for other equipment and protects the Mac from power surges.

Jasmine uses a fan that pulls air through filters in the case's front edge and expels it at the bottom. The fan is fairly subdued (though not as quiet as Personal Computer Peripheral Inc.'s MacBottom's), but we question the effectiveness of the cooling system. The metal case gets quite warm after a few hours work, yet the air leaving through the fan exhaust is relatively cool. This seems to indicate that more heat is being released through the metal walls than through the fan opening.

Removing the filters would permit better air flow and better cooling of critical components, but would defeat the purpose of the dust-trapping filters. In any case, the heat did not pose a problem during our evaluation, but it was a source of concern.

Overall, we believe the drive is both well-constructed and well-designed. Jasmine did not cut corners.

Documentation

The documentation for the Direct Drives is written on 8.5- by 11-inch paper, bound with heavy-duty staples.

It is not very pretty, but it does contain a good mix of technical and practical information about the drive. Precise hardware specifications are included for technically-minded users.

For those who want to use the drive correctly but could not care less how many cylinders it has, there are instructions for setting up and formatting the drive, managing files and troubleshooting, along with other bits of information useful for keeping the drive working at its best.

Support

Our experience with Jasmine has been that its products and support are excellent. Only the price is lower than the competition's.

The drives are sold directly by the company, not through retail channels. Jasmine offers a "no excuses" 30-day money-back guarantee for its drives — a commendable rule, especially because a lot of people are afraid the drive is below par and hesitate to buy one directly from the factory.

Jasmine has a toll-call support line open from 8 a.m. to 5 p.m. Pacific Standard Time. We have called Jasmine with questions several times. Each time we received a quick, courteous answer.

Perhaps the worst aspect of Jasmine's support is delivery. The drives have become so popular that the manufacturer has trouble keeping up with demand.

Expect to wait two to three weeks for delivery of the Direct Drive 20; the waiting time is less for the Direct Drive 80.

Recommendations

Both models are excellent values. The Direct Drive 80 sells for about the same price as some 20-Mbyte drives, while the Direct Drive's price is much lower than that of many 20-Mbyte drives.

We highly recommend both the Direct Drive 20 and the Direct Drive 80 as excellent products for the price. They do not come with a lot of fancy software, so would-be buyers should consider that lack before buying either of these Jasmine drives.

Buyers will definitely want to get some type of backup software, and programs for partitioning the drive or password-protecting certain files may also be needed.

Jasmine's philosophy is, "Sell the drive at an inexpensive price and let the user decide what utility software he needs."

Continued on next page.

Stephen Phillips, a member of the MacWEEK reviewing staff, gets down to the guts of external disk drives.

DAVE HAWKINSON

Continued from previous page.

Cirrus 21D, 40FD, 60FD

☆ ☆ ☆ ☆

Kamerman Labs
7861 SW Cirrus Drive
Beaverton, Ore. 97005
(800) 522-2237
21D: **$949** (list price)
40FD: **$1,699** (list price)
60FD: **$1,999** (list price)

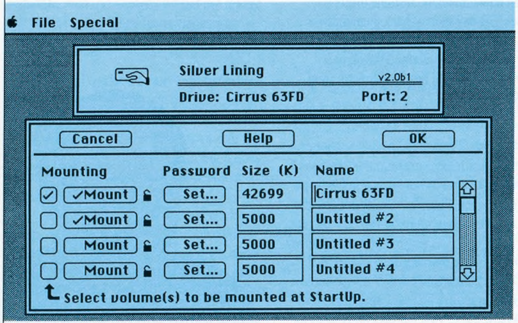
The Cirrus drives are fast and well-built. They feature innovative design, versatile software and competitive prices.

The Cirrus hard-disk drives from Kamerman Labs of Beaverton, Ore. — in 20-, 40- and 60-Mbyte models — have many attractive features: innovative design, impressive speed, flexible software and quiet operation.

If the vendor can overcome some current financial problems and make a few improvements to the hardware, these drives could well become serious contenders in the marketplace.

Ease of use

For users running a Cirrus drive by itself, operation is just a matter of plugging in the preformatted drive and turning it on. The accompanying software can partition the drive into several separate volumes or combine multiple drives into one single volume. This flexibility permits the user to set up whatever pattern of data storage is most convenient. If the drive performs erratically, there are diagnostic routines. (A few of the tests will destroy data on the disk, but these options are clearly labeled and need not be used.) The Macintosh interface is followed closely, even though the company has only recently entered the Mac market after years as a vendor of mass-storage devices for the IBM PC.



Silver Lining v2.0b1
Drive: Cirrus 63FD Port: 2

Mounting		Password	Size (K)	Name
☑	✓Mount	Set...	42699	Cirrus 63FD
☐	✓Mount	Set...	5000	Untitled #2
☐	Mount	Set...	5000	Untitled #3
☐	Mount	Set...	5000	Untitled #4

Select volume(s) to be mounted at StartUp.

Example of the Cirrus 60 partitioned into four volumes. Size and mounting options are user-defineable.

Using the drive in a chain is a different story, though. Cabling is easy enough because Kamerman provides two DB-25 connectors of the type used by Apple, in preference to the "standard" 50-pin connectors. But the company did not follow Apple's guidelines by placing the SCSI terminators inside the case. If the drive is used anywhere except last in the chain, the terminators must be removed, requiring opening the case and pulling these very small items out. Changing the SCSI address on the 20- and 60-Mbyte drives is even more cumbersome: The hard disk itself must be removed from the case while several jumpers on the controller card are rearranged. Only the 40-Mbyte model can have its SCSI address changed without opening the case.

Users who frequently move drives around will be especially frustrated by these problems. We have been assured, however, that Kamerman is correcting the primitive SCSI termination scheme.

Performance

Cirrus drives were engineered to perform well in everyday situations. Reading and writing to and from many small files (typical real-world operations) are very fast, as are mounting and dismounting. The interleave factor — a technical variable that determines the pattern in which data is written to disk — can be set by the user to achieve optimum performance for the particular drive/computer combination in use. All these drives also are remarkably quiet.

Since the Cirrus software is very good, some users may want to use it to initialize drives of other brands. In our tests, this worked very well and allowed different drives to be linked together as one volume. Since many of the older SCSI drives came with poor software, this is one good argument for buying a Cirrus drive.

Design and construction

Though very small and lightweight, the drives are constructed with high-quality materials and designed to last. Because of the small number of components in each drive and the light plastic case, the unit's weight is low. The case, however, is a little too light. The seam between the two pieces of the case tends to open up every time the drive is lifted. While users should always be extremely careful when transporting hard drives, this is especially true of the Cirrus.

Except for the case, the Cirrus is a durable piece of equipment. The entire power supply is encased in aluminum, and the drive itself is shock-mounted on rubber bearings. The 20- and 40-Mbyte units are made with plated media, while the 60-Mbyte drive has less reliable oxide media. Because the 60 runs a little warmer than the other two, the variable-speed fan rotates at a higher speed, making it slightly noisier.

The Cirrus drives have the simplest and most elegant design we have seen in a hard drive for the Macintosh. The modular construction of the drives means any repair work will be quick and easy and will have a minimal effect on the rest of the unit.

> "The Cirrus drives have the simplest and most elegant design we have seen in a hard drive for the Macintosh."

Unlike other drives for the Macintosh, the Cirrus units can be placed vertically or horizontally, depending on the user's preference. The design allows the molded cases to be fitted together or stacked up while providing plenty of airflow to the vents. This is a feature that can save considerable space if multiple drives are in use.

Documentation

The manual that comes with the drives is adequate, but incomplete. We understand that Kamerman Labs is still working on the documentation. Since its software has so many features, a manual for a Cirrus drive is more important than it is for other drives.

Support

Because Kamerman Labs is new to the Macintosh market, it is too early to tell what kind of support customers will receive. Readers should note, however, that the company is currently in reorganization under the Chapter 11 bankruptcy-protection statute. By itself, this does not necessarily indicate that the company's chances for survival are poor. Joel Kamerman, president of the company, says that there are no plans for liquidation and that, whatever happens, support and upgrades will be available through the company that owns the rights to the product. Acceptance of the Cirrus drives — and other new products that the company says are under development — will greatly enhance Kamerman's long-term prospects.

Recommendation

Cirrus drives are powerful drives with powerful software, designed for the professional user. They were not engineered to be low-cost products. Many users will not need some of the capabilities Cirrus drives have to offer. In these cases, a drive with simple but inflexible software may be a better solution.

But for users with complex requirements, Cirrus drives represent a good solution, and they will become an even better one when the SCSI termination scheme has been improved. The software may be more complicated than the average for the drives' class, but it offers more flexibility.

We recommend the Cirrus drives to serious users. All three are well-engineered units. We do, however, have some reservations about the 60FD. While very similar, it is less likely to be reliable than the others, because it runs hotter and uses a different media.

Counter Point

Kamerman Labs grew too big, too fast as a manufacturer of IBM PC equipment. Chapter 11 provided the appropriate remedy for an otherwise sound and growing business and gave Kamerman Labs the opportunity to introduce its new Macintosh products while benefitting from the continuity of an established company In fact, Kamerman Labs has been profitable for the three consecutive months following filing in January 1987.

Joel Kamerman
President, Kamerman Labs

MacBottom HD-21

☆ ☆ ☆ ☆

Personal Computer Peripherals
6204 Benjamin Road, Tampa, Fla. 33634
(800) MAC-BUTT; 813-884-3092
$875 (street price); **$1,195** (list price)

The MacBottom was one of the first external hard drives for the Macintosh, and it remains one of the best. The current version is fast, easily portable and exceptionally quiet. The software included is excellent.

The MacBottom HD-21 from Personal Computer Peripherals Corp. of Tampa, Fla., is an attractive, well-designed SCSI hard drive that combines exceptional ergonomics, excellent software and high performance.

Ease of use

In most respects using the MacBottom is simple and straightforward, but there are a few complexities. The drive comes from the factory formatted and ready to use. All the user needs to do is connect the built-in SCSI cable and plug the drive into the power outlet.

The MacBottom comes with a full complement of utilities, including software for formatting the drive, backing up to floppy disks, finding files on the disk and spooling printing.

The backup program — also marketed separately as HFS Backup — is one of the most flexible available for the Mac. Setting the drive's SCSI address is easy because there is an externally accessible switch underneath the drive.

The SCSI terminator resistors, however, are built in. This design, a departure from Apple's guidelines, simplifies set-up when only one or two drives are in use; the trade-off is that daisy-chaining additional SCSI devices is more difficult. The documentation does not indicate how to make adjustments. At best, the job requires opening the case to change or remove resistors.

Performance

When it comes to speed, the MacBottom is no slouch. Although it proved a little slower in one of the simple benchmark tests that we performed, the drive was faster in some others.

When used in normal, everyday situations, the drive *feels* fast. It mounts on the desktop quickly, and applications seem to open rapidly.

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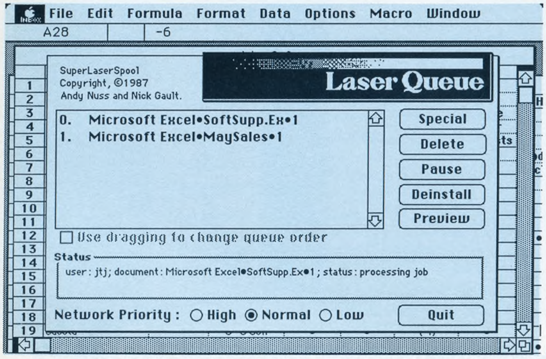


SuperLaserSpool
Copyright, ©1987
Andy Nuss and Nick Gault.

0. Microsoft Excel•SoftSupp.Ex•1
1. Microsoft Excel•MaySales•1

☐ Use dragging to change queue order

Status
user: jtj; document: Microsoft Excel•SoftSupp.Ex•1; status: processing job

Network Priority: ○ High ● Normal ○ Low

The DataFrame XP20 and XP40 come with the SuperLaserSpool print spooler and other good utility programs.

Continued from previous page.

Design and construction

The MacBottom has a clean, neat design. Printed circuit boards have replaced much of the wiring, so there are very few wires inside the case. All the components appear to be of high quality. The drive mechanism is made by Rodime, a well-known manufacturer that recently released its own drive for the Macintosh.

The case is made of plastic that is light but feels very solid. Because it weighs less than 5 pounds, the MacBottom is easy to transport. And since the drive is only 2.5 inches high and has the same footprint as the Mac, it will fit in most Mac carrying bags. Users who lug their Mac and hard drive to and from work will appreciate not having to use a wagon to move it around.

Early serial-port hard drives from Personal Computer Peripherals were often criticized for being noisy, but the company is now using a very quiet fan to cool internal parts. The system draws air in through a vent in the top of the drive and pushes it out through the bottom. It seems to do an effective job.

Documentation

The MacBottom comes with a sturdy, 9- by 7.25-inch staple-stitched manual. It is clearly written and gives fairly complete instructions about operating the drive in most common configurations and using the software that comes with it. Technical information, however, is sparse, and there is no index.

Support

Personal Computer Peripherals gets high marks for support. While calls to its Tampa, Fla., offices are not toll-free, the staff handling the phones is courteous and knowledgeable. The company has also distinguished itself by offering upgrades to its customers as storage technologies have evolved. Recently the firm has begun to sell drives with a 1,200-baud modem built into the case; owners of older units can have the modem retrofitted. We were not able to test a modem-equipped unit.

Recommendations

Overall, we highly recommend this drive. $875), it is much more expensive than Jasmine's Direct Drive 20, but the MacBottom comes with first-class utility software. If portability is an important consideration when considering which unit to buy, the MacBottom is an especially good choice, but all Macintosh users will appreciate this drive's fast, quiet and reliable performance.

DataFrame XP20, XP40

SuperMac Technology ☆ ☆ ☆ ☆
950 N. Rengstorff Ave.,
Mountain View, Calif. 94043
(415) 964-8884
XP20: **$799** (street price); **$1,299** (list price)
XP40: **$1,390** (street price); **$1,899** (list price)

The DataFrame XP20 is fast, and its big brother is even faster. Both of these popular drives are quiet, compact and bundled with some superb software.

If you are shopping for a fast and quiet hard drive with an impressive array of utility software, then the DataFrame XP20 and XP40 from SuperMac Technology belong at the top of the list of products you should check out, provided you can afford a premium price.

Ease of use

Aside from a few setup glitches, the DataFrames function just as you would expect of a Macintosh product — simply. They come from the factory preformatted and ready to use. While some of the utility software included with the drives is mediocre at best, the programs you will be using regularly are of superb quality.

The installation routines are not as smooth as they should be. We suffered repeated system crashes while attempting to use the software that changes the drives' SCSI address number, a procedure required when multiple drives are installed. (Although a software solution to this problem sounds attractive, our misfortunes in this case made us appreciate the virtues of an easy-to-use hardware switch, such as the makers of the Jasmine and MacBottom drives have built in.)

The DataFrame formatting utility (Initializer 2.5) is more reliable, but it includes no diagnostic features.

The SuperParker program, which places the hard drive's read-write heads in a safe position before the drive is transported, is easy to use, but forgetting to run it is also easy. We much prefer an automatic function that would park the heads whenever the power is turned off.

The backup and print-spooling programs are the real gems in the SuperMac collection. Marketed separately for use on other hard drives, they are among the best such products available. DiskFit is a fast and flexible backup program that allows incremental or complete backups, and it has help windows that clearly explain all the many options available.

SuperLaserSpool is a lightning-fast print spooler. Within moments of "OK'ing" a print command, you will be able to use your Mac again while printing goes on in the background. In a busy office, where the queue for the LaserWriter can get unbearably long, a good print spooler could easily justify the cost of the whole hard-disk-drive system. (MacWEEK will be reviewing SuperLaser-Spool and other spoolers in the near future.)

Performance

The XP drives are quiet and, especially in the case of the 40-Mbyte model, fast. Because the XPs, like the original Macintoshes, rely entirely on convection cooling, there is no fan noise. Don't expect complete silence, though. The numerous slits that let air circulate through the case also let sounds out, and when the drive is in use, the read-write heads make a distinct chirp that can be distracting in a quiet room.

In terms of speed, the XP20 outperforms most 20-Mbyte hard disks and more than holds its own against 40-Mbyte drives. The larger DataFrame is the real speed demon. According to our benchmarks, it was clearly (though not overwhelmingly) the fastest drive tested for this review.

Design and construction

The DataFrames are small, vertically mounted drives designed to stand next to the Macintosh. (The right side as you face your Macintosh is preferred because of the potential for strong magnetic fields from the analog board on the left side of the computer.) Because the drive is small and light, it is easily transportable; we know several Mac users who regularly carry their DataFrames to and from work.

The case is fabricated from sheet metal and is finished with a texture similar to that of the Macintosh. The buff color of the old Macintosh Plus or the platinum color of the Macintosh SE can be specified. Inside, the components are of good quality, and the engineering is clean and careful. Connections to the controller card have sockets, and the controller card can be replaced in a matter of seconds.

> "The popular DataFrame XPs are high-performance drives that come with some first-rate utility software and are well-supported by the vendor."

Documentation

The documentation shipped with the drive is well-organized and complete, down to some often overlooked features. The manual includes instructions on cabling, daisychaining disk drives, correct placement of terminators (along with an excellent and very clear diagram), and understanding SCSI ID numbers.

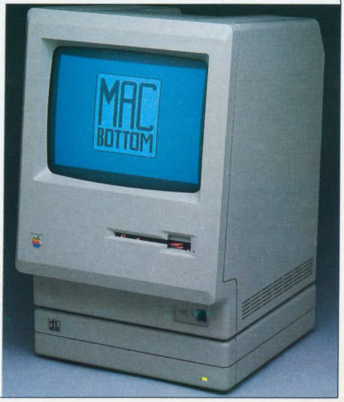
SuperMac clinches the "good documentation award" by equipping the manual with a clear and concise table of contents, as well as an index. Technical specifications are included in an appendix.

Good as they are in most respects, the SuperMac manuals do illustrate the problems associated with rapidly changing technologies and product lines. A large section of the manual is devoted to SuperBackup, a utility program formerly bundled with the DataFrames. Not a word is said about DiskFit, the backup software SuperMac is currently supplying.

Some last-minute notes are placed on the disk with the utilities, but, in our opinion, such electronic documentation is no substitute for a complete manual.

Continued on next page.

> "All Mac users will appreciate the fast and reliable MacBottom."



Continued from previous page.

Support

SuperMac has had an excellent record in the support area. It pioneered the one-year warranty on drives, instead of the 90-day period that used to be standard and is still offered by some vendors (notably Apple).

Along with Personal Computer Peripherals Corp. of Tampa, Fla. (makers of the MacBottom disks), SuperMac wins extra credit in our book by making it possible for owners of the older and slightly less expensive DataFrame 20s to upgrade to the XP technology, even though the upgraded units do not quite achieve the levels of performance of brand-new XPs. The company has also made it easy for users to update utility software for the disks by allowing it to be distributed over electronic bulletin boards.

SuperMac backs up its commitments with good service. When one of our staff had his DataFrame 20 expire, a new drive was shipped to him by overnight mail and actually arrived before he had sent the old one back.

The XP40 sent to us for evaluation went down after just three days of use. (An estimated 10 percent of all hard drives expire shortly after delivery.)

We called SuperMac incognito and explained the situation. The technician guessed the problem and suggested a fix. When we said we needed the data urgently, he instructed us on replacing the controller card of the XP40 with the controller card from an XP20 in our offices. All data was promptly recovered and transferred to another drive, and SuperMac immediately sent a replacement unit.

Unfortunately, there are some signs that the quality of SuperMac's telephone support has slipped slightly as the company has grown. When you call, be prepared to wait for several minutes to talk to a person. However, even with the delays, the telephone support staff generally provide the answers you need.

Recommendations

The popular DataFrame XPs are high-performance drives, they come with some first-rate utility software and they are well supported by the vendor.

Between the two DataFrame drives, the XP40, with its additional capacity and faster performance, is clearly the better bargain for those users who need the storage space and whose budgets will permit the additional expenditure.

Quality costs, of course, but at $1,299 (retail list) for the 20-Mbyte model and $1,899 for the 40-Mbyte, SuperMac's prices are steep. Even when the value of the bundled backup and spooling programs is taken into account, the DataFrames remain significantly more expensive than other excellent drives.

You won't go wrong with a DataFrame, but if your budget has limits, you should take a close look at some of the competing drives before making your decision. ■

The DataFrame XP20 and XP40 from SuperMac Technology are of excellent quality but expensive.

A word about our rating system …

MacWEEK's hardware evaluation team tested each of the SCSI hard disks reviewed here on a new Macintosh SE.

We looked first at ease of use, including setting up the drive, using its utility software and reconfiguring to work in a daisychain with other SCSI devices attached to the same computer.

We measured performance by using each drive in a typical busy office and by clocking its speed in benchmark tests with a 480-Kbyte, 5,000-record file created in OMNIS 3 Plus.

Our engineers also took a close look at the design and construction of each drive. We evaluated the manuals for clarity and comprehensiveness, and we rated customer support by calling with questions and by reviewing each company's warranty and upgrade policies.

Our overall ratings are on a one-to-five-star scale. ■

Hard Disks Compared

	Kamerman			HyperDrive	DataFrame		CMS	MacBottom	Jasmine	
	21D	40FD	60FD	FX/40	XP-20	XP-40	S40	HD-21	20	80
Benchmarks										
Created File (min:sec)	18:17	18:30	15:57	18:08	18:35	15:04	18:47	22:32	19:21	15:22
Write to HD (seconds)	7	7	7	7	8	7	18	6	7	7
Write to RAM (seconds)	8	10	5	7	10	9	9	9	12	11
Features										
Comes Complete?	√	√	√	√	No	No	√	√	√	√
External SCSI Address?	No	No	No	No	No	No	√	√	√	√
Software SCSI Address?	No	√	No	√	√	√	No	No	No	No
Formatted Capacity	20,480	38,472	62,699	38,421	20,142	41,148	39,424	18,874	20,524	76,950
Types of Connectors	25 pin	25 pin	25 pin	50 pin Centronics	50 pin Centronics	50 pin Centronics	25 pin	25 pin	50 pin Centronics	50 pin Centronic
Software										
Backup Software?	No	No	No	√	√	√	√	√	No	No
LaserWriter Spooler?	No	No	No	√	√	√	No	No	No	No
ImageWriter Spooler?	No	No	No	√	√	√	No	√	No	No
Disk Repair Utility?	No	No	No	√	No	No	√	No	√	√
Partition/Link?	√	√	√	No	No	No	No	No	No	No
Password Protection?	√	√	√	No	No	No	No	No	No	No
Definable Interleave Factor	√	√	√	No	No	No	No	No	No	No
Park Heads:	√	√	√	√	√	√	√	No	√	√
Automatic	√	√	√	No	No	No	No	No	No	No
Manual	√	√	√	√	√	√	√	No	√	√
Diagnostics	√	√	√	√	No	No	√	No		

STEVE ROSENTHAL

The lure of electronic page layout seems irresistible for those of us who used to crank out newsletters with an IBM Selectric and a gallon of white-out. But as I work with desktop-publishing programs (dt-p) on the Macintosh, I find myself realizing that what we have only points out what remains to be done. So-called dt-p software does not really encompass the full publishing job, and it is a struggle to fit both a Mac and a LaserWriter on a single personal-sized work surface.

"Desktop-publishing software does not encompass the full job."

More problematic, not one of the popular PC programs I have looked at addresses the basic fact that page layout is only a small part of the publishing process. For publishing jobs from advertising flyers to zoological reports, we need tools for planning, coordination, design, production and distribution, as well as ones for laying out type on the page.

Not that I am complaining about the general level of dt-p programs themselves. Considering how new the genre is, programs such as Aldus Corp.'s PageMaker or Manhattan Graphics Corp.'s Ready,Set,Go! are surprisingly effective tools for putting headlines, rules and columns of text on pages. I spent years with an X-Acto knife and a waxer, and already I find I can put a four-page newsletter together faster electronically than I can with the paper-based alternative. Furthermore, the pace of evolution is rapid. We might have been impressed last year by PageMaker's ability to format text into a resized column on the spot, but this year we can choose a tool such as XPress and flow that text around an irregular object. Last year, we could pick bold or normal type; now we can choose typesetting features such as kerning.

Fortunately, while we are waiting for the programs to evolve, there is still a lot we can do with other Mac programs.

Take, for example, the question of planning. If we are working on a multiple-author project, such as a medium-to-large newsletter, we must figure an editorial space budget, assign and track the stories, proof and edit submissions and collect the artwork — and all this has to be done before we are ready for a project.

We can do that all with pencil and yellow pad, of course, and many publications that are set electronically are still planned manually. But that is like using a spreadsheet to consolidate the results of banks of mechanical-adding machines. Instead, let us start with a database.

I like FileMaker Plus from Forethought of Sunnyvale, Calif., for a number of reasons. For starters, it is easy to set up. I generally want to spend my time writing and editing, rather than creating and managing the database, so that is obviously important.

Typically, I will create a form that has fields for the article title, author, current status, length, payment, illustrations and a description. On projects where outside people are involved, I might add the author's phone number, and maybe the best time to reach him or her.

With FileMaker Plus, I can have as many reports and forms as I like, using the same basic data. On most of my projects, that means one list of articles by due date, one by status, one by author and one by title. I might not even print out each one every day, but I can always call it up quickly on-screen if I need to make a quick check on how some element is progressing. Using a database has more advantages than simply being able to make a neat printout of all the information. By defining the length as a number rather than a text field, it is easy to do a quick sum of the lengths of either the full article set or any smaller selection so I can plan how much text is coming compared with what is needed.

The indexing feature of the database also is a great help. If I have forgotten who is going to do the story on superconductors or the last name of an author whose first name is "Samantha," I can look it up without having to paw through piles of crumpled notes.

I can put moderate amounts of text directly into a FileMaker record. As with many of the better disk-based databases for the Mac, FileMaker expands text fields as needed to encompass all that I enter, up to the maximum possible field size (just over 32,000 characters for FileMaker). But unless I am doing a project made only of short subjects, such as a directory or a catalog, I will probably want to write with a word processor because it supports text operations better. In addition, because FileMaker indexes every word, it tends to slow down substantially when loaded with text.

It is possible to put graphics into FileMaker fields, but I have not done so. In most newsletters, I try to use photographs that are pasted on the page flats after all the other layout is done, rather than accept the much lower resolution of the LaserWriter or the Linotronic 100 series typesetters.

But even if I had access to a high-resolution typesetter, neither the Mac nor FileMaker can easily handle highly detailed, scanned images with lots of gray tones. The Mac display screen, for example, is limited to 72 dots per inch, compared with four to 40 times as much for a high-resolution typesetter.

It might be worth a try on a large project to keep track of illustrations and photos with rough drawings or coarsely scanned images rather than with descriptions. There also are some pictorially-oriented databases, such as PictureBase from Symmetry Corp. of Mesa, Ariz., that sort images by the keywords we supply when we save the images. But they have the same problems with high-resolution pictorial images. We may have to wait for affordable optical disks with their prodigious storage capacity for a good solution to this dilemma.

That is one way to take care of the organization of project information. But, as I will cover next time, there are still a few steps before we are ready for page layout — and more Mac tools that can help. ■

Effort to make modems obsolete hits snag

BY JOHN EDWARDS

Special to MacWEEK

If Pacific Bell has its way, your modem will eventually become obsolete.

Such news is both good and bad for the busy computer communicator. On the one hand, modems do a generally reliable job of transmitting data at a reasonable cost. On the other hand, modems have to work within the limitations established years ago for traditional voice transmissions. This means that modem technology has probably gone about as far as it can for now.

Enter Pacific Bell. A while back, the folks at Pac Bell looked at the way computer users send and receive data and figured they could improve the situation. The result is Project Victoria, an experiment that aims to merge voice and data communications into a single package and give the public a taste of the phone service of the future — if the project ever gets off of the ground, that is.

At the heart of Project Victoria is a multiplexer that digitizes everything — voice and data — at the point of origin. The multiplexer allows a single telephone line to carry as many as seven transmissions simultaneously: two voice channels (operating at 32,000 baud) and five data channels (one operating at 9,600 baud and the other four at 1,200 baud).

Last year, Pac Bell installed multiplexers and Macs in the homes of 200 customers for a test. The users were connected to six information services, including MCI Mail, the Dow Jones News/Retrieval Service and a Bank of America home-banking network.

Now for the bad news. Pac Bell had planned to conduct a larger trial in Los Angeles later this year, but the experiment was scuttled early this month when the Common Carrier Bureau of the Federal Communications Commission ruled that Project Victoria's multiplexer must be treated as customer-premises equipment rather than as a part of Pac Bell's lines.

From Pac Bell's viewpoint, the decision is a major blow to its hopes of cornering the small-user data-communications market. If the FCC's ruling stands (the firm is appealing the decision), other companies will be permitted to manufacture multiplexer units, allowing competition that Pac Bell never counted on. Until the FCC reconsiders, Pac Bell has halted development of Project Victoria.

According to Michael L. Eastwood, Pac Bell's executive director for new network applications, the ruling, if it stands, will raise user costs because since customers will have to pay for both the multiplexer and the service. But Pac Bell's foes — including IBM, Tymnet, Telenet, Western Union and the Independent Data Communications Manufacturers Association — contend the decision will cut user costs because competition will drive down the multiplexer's price. In light of this commotion, can Project Victoria make it? Perhaps. But the service has technical as well as political problems working against it.

Combining several data and voice channels is appealing. The 9,600-baud channel, in particular, could provide a genuine boost to online information and electronic mail services as well as medium- and long-haul Mac-to-Mac, Mac-to-PC and Mac-to-mainframe data links. Less impressive, however, are the four 1,200-baud channels. After all, 1,200 baud is no great leap forward.

Still, the system's open architecture may work in its favor. If Project Victoria ever gets off the ground, third-party manufacturers are likely to devise all sorts of interesting add-ons for the standard, including security systems, sophisticated inventory control/ordering systems and accounting software.

Project Victoria beckons as an electronic beacon to the 21st century. All that's left for Pac Bell to determine is if it wants to go ahead with the plan. If not, will someone else pick up the technology and run with it?

* * *

What in the electronic world is going on with The Source, that erstwhile information service based in McLean, Va.? After years of floating adrift in the on-line ocean, it appears as if The Source, in its current incarnation, will soon receive that final OFF command.

It's sad. Such unfulfilled dreams, such failed promises. I've always viewed The Source as the backward sibling of both CompuServe and the Dow Jones News/Retrieval Service. Like the ne'er-do-well younger brother who could never quite decide what to do with his life, The Source has never been able to stake out a slice of turf for itself.

A long time ago, CompuServe chose to target home and professional users. Dow Jones opted to go after serious investors and heavy business clients. The Source, however, seemed incapable of targeting anything but its own foot. Anyway, The Source was recently bought for $10 million by Welsh, Carson, Anderson and Stowe (WCAS), a New York venture capital firm. Its previous owner, The Reader's Digest Association, realized it wasn't the firm to pull The Source out of its doldrums and bailed out.

According to Interactivity Report Newsletter (IRN), WCAS plans to merge The Source into its automated marketplace systems and dealer systems information divisions and use The Source's facilities to develop services for the other divisions.

But how does this help The Source user? It doesn't — at least not in long run. The newsletter claims that WCAS may, over the short-term, fatten up The Source with additional features to make it more attractive to an outside buyer. WCAS may also take The Source public, IRN says. But it is apparent WCAS's main reason for buying the service is to use The Source's resources and workers to help improve WCAS's existing divisions and, if possible, turn a quick buck. In any case, The Source as we all (few?) know it, will soon no longer exist. Even younger brothers must leave home eventually. ■

Dealers report Macintosh SEs, Pluses selling like hotcakes

BY GIL DAVIS
Special to MacWEEK

CUPERTINO, Calif. — Macintosh SEs and Pluses are selling so well dealers report they can hardly keep them in stock.

A recent survey of 10 Apple dealers found they sold a total of 368 Macintoshes in April; 56 percent were SEs and most of the rest were Pluses, except for a few 512Ks.

Dealers report Macintosh sales are up 50 percent to 300 percent over last year, primarily due to sales to businesses. "We're selling SEs and Pluses like hotcakes — we can't keep them in stock," says Keith Wood, a Macintosh specialist at Computerland in San Francisco. "In fact, we're now selling more Macs than any other system."

Macintoshes are growing in popularity because the new SEs and IIs are now viewed as powerful computers with good growth potential, Wood says. In downtown Los Angeles, Macintosh sales shot up 300 percent after the March 2 introduction of the SE, says Bruce Gerson, Computerland store manager.

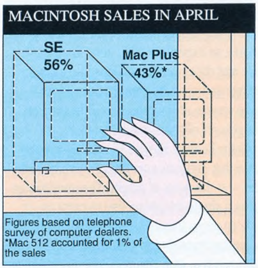
"We're placing Macintoshes in businesses that never had a Mac before," he says. "And where there was a pocket of Mac interest in a company, we're getting multiple orders."

Dealer comments confirm claims by Apple Computer Inc. that Macintosh sales are up more than 50 percent — from $80,000 in the first quarter of 1986 to $125,000 in the first quarter of 1987.

Apple says Macintosh sales went even higher in April when it shipped at a rate of 50,000 Macs per month. U.S. sales of SEs are expected to reach 157,000 units during 1987, compared with expected sales of 224,000 Pluses and 36,000 512Ks, according to Dataquest Inc., a San Jose, Calif., marketing research firm.

Corporate buyers, such as Pacific Bell of San Ramon, Calif., and Lawrence Livermore Laboratories near Livermore, Calif., are also showing more interest in the Macintosh. At LLL, a government-oriented think tank run by the University of California, twice as many Macintosh SEs as Pluses were ordered in April, says spokesman Jon Rosell. Just the reverse was true in March when 69 Pluses were ordered compared with 25 SEs, he says. (The Macintosh SE was introduced March 2.)

MACINTOSH SALES IN APRIL



Figures based on telephone survey of computer dealers.
*Mac 512 accounted for 1% of the sales

Source: MacWEEK Survey

LLL presently has about 5,000 MS-DOS computers and 2,000 Macs. But that preference may be changing radically. In February, LLL's PC Support Center ordered 104 MS-DOS computers and 60 Macs. In March, those figures were reversed with 105 Macintoshes ordered compared with 51 MS-DOS systems. The trend continued through April, Rosell says.

Macintoshes are now sold mostly to businesses. During the past 12 months ending March 27 about 60 percent of Macintosh sales went to businesses. Of those, about half went to medium-size and large businesses with more than 1,000 employees, according to Apple. Its next largest Macintosh market is higher education, with 30 percent of the total Mac production. The remaining 10 percent go to home use.

Apple announced April 15 that quarterly sales surged 41 percent to $573.3 million. The stock market responded by sending Apple's shares up $3 in one day to $71 per share. Apple says Mac sales remained "extremely strong" despite major product introductions by IBM on April 2 and Apple on March 2. ■

Adobe sets an industry standard for graphics programs with PostScript

BY ROBERT COWART
Special to MacWEEK

Since the release of the Apple LaserWriter printer, the PostScript page description language (PDL), internal to that machine and used to integrate graphics and text on a printed page, has seen nothing but widespread acceptance by users and manufacturers.

Now Adobe Systems Inc. of Palo Alto, Calif., originator of PostScript, has another major feather in its cap with the recent endorsement of PostScript by IBM Corp. That makes at least 13 major printer or typesetter manufacturers to license PostScript.

Firms such as Apple, QMS, DEC, Wang, ITT-Qume, Apollo Computer, Agfa-Gevaert, Sun Microsystems, NBI, NEC Information Systems, Allied Linotype and Dataproducts back the standard. Recently, Hewlett-Packard threw its hat into the ring by opening its popular LaserJet Series II printers to plug-in cards that will accept the PostScript language.

But Adobe's success in enlisting hardware and software vendors to design around the PostScript standard appears to have been only the first stage. Adobe has now received the highest form of flattery — imitation. At least three, and perhaps as many as six, software companies are said to be developing lower-cost PostScript-compatible "interpreters" intended to compete with Adobe's.

Like many computer programming languages, the PostScript language itself — a set of almost 300 commands for drawing lines, curves and characters — is in the public domain. Thus, there is no licensing fee to manufacturers or end users for use of the language. However, Adobe's version of the PostScript interpreter, which converts the commands into printed pages, is owned by Adobe, legally protected and licensed on a case-by-case basis to printer and typesetter manufacturers.
Other software developers may devise their own PostScript interpreters, just as there are numerous BASIC or Pascal interpreters, but to be legal, they must be written from the ground up, "not reverse engineered," a difficult task with such a complicated language.

But the market demand for lower-cost alternatives is growing. PostScript-capable laser printers still carry list prices roughly double that of simpler, non-PostScript devices that use the same printing "engine," the actual printing mechanism. For example, the Apple LaserWriter Plus lists at $5,799 and the QMS PS-800+ is $5,583, but the Hewlett-Packard LaserJet Series II checks in at $2,495.

Clearly, though, not all the additional cost is rolling over into Adobe's court. Laser printers using PDLs require more internal RAM and faster microprocessors than do simpler machines, and Adobe's royalty cut is not negligible. Still, determining exact cost is difficult.

"Actual pricing (of the PostScript interpreter) with our customers is proprietary," says

See POSTSCRIPT on Page 19.

The Apple Computer Inc. LaserWriter Plus, the most widely-known PostScript output device.

MARK FARBIN

Apple seeks resellers for VAR program

BY KATHY WILLIAMS
Special to MacWEEK

CUPERTINO, Calif. — Doctors have special computer needs. So do coin dealers and architects. Often a computer technician can develop and sell a product that solves the problem, but the customer wants a custom package with hardware, software, service and support.

Apple Computer Inc. also is looking for those vendors who can provide custom packages for its value-added reseller (VAR) program. "The challenge is to get the word out that Apple is interested in VARs who can meet customer demands. With 70 percent of the vertical (specialty) solutions coming from VARs, (VARs) are important to us now and in the future," Erna Arneson says.

Arneson should know. As Apple's VAR channel sales manager, she is in charge of introducing Apple's flagship product, the Macintosh II, to specialty retailers.

Sales to specialty or vertical markets have always been a small percentage of the computer market with IBM doing most of the business. Future Computing Inc. of Dallas says computer stores sold $7.7 billion worth of personal computers in 1986. VARs sold $3.9 billion. In terms of dollars, special needs often require higher-end or top-of-the-line products. In terms of units, however, the VAR market produces a very small percentage of sales.

VARs are required to take an Apple product and add on a component that has tangible value. "Usually it is a software product that fits a specialty niche, like health technology or civil engineering," Arneson says.

The top markets for VARs, according to Future Computing's September 1986 survey of 3,000 VARs, are retail and wholesale businesses (25 percent), general business (23 percent), medical (22 percent) and manufacturing markets (20 percent). Although Apple's list of VARs is confidential, 25 percent of its VARs are in the printing and publishing business.

Having an adaptable product is essential in the VAR market. The Mac II, with its open design, is the first Apple product to meet these needs. The Mac II's enlarged screen display of 640 by 480 pixels and the expandability of its RAM are features VARs often need in a business product.

With a base of a couple hundred VARs already working with Apple, Arneson says the process for qualifying resellers is in place. Apple wants control of the VARs and has stringent rules similar to IBM's. A vendor must sell Mac and Apple-based products, be willing to buy $250,000 worth of Apple products, and provide service and support to customers. If a vendor can not provide service, an arrangement with Honeywell Inc. in Needham, Mass., is an option.

Unlike IBM, Apple's VARs are not permitted to be storefront operations. They are "specialized, vertical houses" that Apple reviews. Apple especially checks customer references.

See VARS on Page 19.

Prices vary across nation for popular Mac software

AMBLER, Pa.— PageMaker, by Aldus Corp. of Seattle, topped the list of the top-five, best-selling Macintosh software programs during 1987's first quarter, according to a survey of 500 U.S. stores by IMS America Ltd., a market research firm.

PageMaker was followed by MicroSoft Works, MacLightning, Microsoft Word and SuperPaint.

Prices for the programs may vary from coast to coast and from store to store, as a recent MacWEEK telephone survey revealed (See Figure 1). In San Francisco, for example, PageMaker retails in one outlet for $460, while in Boston it sells for $495. In San Jose, Calif., the same program goes for $420.

Since the first-quarter results were tallied by IMS, sales of Macintosh software programs have remained fairly constant.

A San Jose sales representative said Microsoft's Word and PageMaker are his top-selling programs. Excel from Microsoft is his first runner up on the best-seller list.

In San Francisco, a computer-software discount firm's salesperson said Microsoft Works is his No. 1 seller. MacWrite was second, and Word, Excel, and FullPaint completed his list.

A Boston software seller reports his firm's No. 1 is SuperPaint. MacMoney, Copy II Mac, Reflex and CricketDraw round out his list of top-five sellers.

IMS' sample stores are storefront locations and carry at least two hardware systems from different manufacturers as well as software. ■

— By Carol Farron

TOP SELLING MAC SOFTWARE PRICES

	Page-Maker (Aldus)	Microsoft Works (Microsoft)	Mac-lightning (Target)	Microsoft Word 3.0 (Microsoft)	Super-paint (Silicon Beach)
Suggested Retail Price	$495	$295	$99.95	$395	$99
San Francisco	$460	$222	$81	$300	$75
San Jose	$420	$250	$85	$165	$68
New York	$395	$199	$60	$250	$70
Boston	$495	$189	$90	$329	$59

Figures based on an informal survey of software retailers in four major U.S. cities.

MacWEEK Telephone Survey

JERRY WAINWRIGHT

Erna Arneson, Apple VAR sales manager

VARS

Continued from Page 18.

Apple provides marketing and sales support. "Most of the VARs are technically oriented. They have developed a value-added component that they want to sell. We can help in areas where they are not experts," Arneson says.

VARs often need seed money, and Apple funnels 2 percent to 3 percent of the VARs' annual purchases into a fund for VAR advertising and educational expenses. Apple's "Quick Start" program allows vendors to borrow against their share (up to $5,000) for advertising and seminars. Two-thirds of Apple's VARs have taken advantage of the program.

Linda White, manager of VAR research at Future Computing, says she sees expansion for VARs in the medical and retail/wholesale business arena. "Manufacturing is pretty strongly computerized by the big guys, while medicine is really under-computerized and has special needs. VARs can meet those needs," she says.

Market analysts, such as Douglas Cayne of the Gartner Group of Stamford, Conn., see Apple's expansion as a search for visibility. Apple wants to capture a substantial portion of future VAR sales, which should top $12.2 billion in 1991, according to Future Computing.

Apple will recruit VARs through advertising, by direct mail and at the Apple Forums scheduled from mid-June through July. ■

POSTSCRIPT

Continued from Page 18

Adobe's Clint Nagy, who handles PostScript licensing, "but it is consistent from manufacturer to manufacturer, based on volume sales."

"I think Adobe's pricing is reasonable, and I don't think they're gouging the market," says Andy Johnson-Laird, president of Control-C Software Inc. of Portland, Ore., best known for its product MAI BASIC Four Business BASIC. "It's my guess that the end-user is currently dishing out between $100 and $200 per printer in PostScript royalty."

Informal estimates of the royalties to PostScript range from 3 percent to 10 percent of the retail printer price. This variation is attributable to individual manufacturer's policies, not to Adobe's. "One company will mark up the royalty four times, while another company may pass the cost through directly, with no increase," said Nagy.

So far, the competition has yet to debut, although imminent releases from Control-C, Phoenix Technologies Ltd. and Barry & Associates are likely to precipitate the first round of PostScript price wars.

According to Nagy, "Five or six (lower-cost) interpreters from other companies are fully expected to appear for this language, but we intend to have the most complete and thorough implementation for PostScript. Ours will always be the most robust and have the best performance characteristics."

Asked how Adobe intends to deal with pricing in the onslaught, Nagy quipped, "We reserve the right to be reasonable."

Johnson-Laird says, "Price attrition happens in all markets, and we expect the same with PostScript. Prices will be dropping, but we want to avoid it occurring prematurely. Early announcements of unavailable products or PostScript clones that may not play properly with existing software will only give PostScript a bad name."

The sticking point for PostScript imitators is not pricing as much as it is the development process. Like the challenge of copying the functions of IBM's ROM BIOS for PC, XT and AT clone makers, copying Adobe's interpreter must be done carefully to avoid legal hassles while keeping compatibility.

Even after cheaper PostScript interpreters become available, several problems will remain for end users and corporate buyers. First, a portion of Adobe's copyrighted interpreter is used to "decrypt" the downloadable type fonts bought from Adobe. More than a few users will be chagrined if their Adobe fonts, running about $150 each, fail to work with a so-called PostScript-compatible laser printer. Unless Adobe releases the font "decryption" scheme, included in existing PostScript printers to the public domain, there will be contention over this point, with end users taking the brunt of another form of software copy protection.

Further complicating the scene is the emergence of three other PDLs: Interpress from Xerox Corp., DDL from Imagen Corp. and QuickDraw from Apple Computer, all slated to market later this year. Whether PostScript will be supplanted by these remains to be seen, but developers are faced with deciding whether to support the non-PostScript languages.

Typically, vendors are designing programs modularly, allowing addition of alternative PDL printer drivers. PDL flexibility is more of a conundrum for printer developers, since including more than one interpreter in a printer is cost-prohibitive. ■

CALENDAR

JUNE

1-4 **COMDEX/Spring,** Atlanta

Products from more than 600 exhibitors. Conferences on desktop publishing, desktop communications, Mac software, connectivity, and hardware trends and technologies.

Contact: Keith Westerman at The Interface Group, (617) 449-6600.

2 **World Forum,** Munich, Germany

Software exhibitions from European, Japanese and American firms, sponsored by European Services Computing Association. Contact: Kelly Baily at the ADAPSO Education Department, (703) 522-5055.

8-10 **International OIS,** London.

Optical information systems seminars, including optical disks, CD-ROM, interactive video disks and CD-I. More than 50 exhibitors are expected to participate. Contact: Marilyn Reed, (203) 964-8287.

10-12, **European Corporate Electronic Publishing Systems Conference and Show,** Frankfurt, West Germany

This first European publishing systems exhibition will feature European products, but U.S. companies will also be represented. Focus on desktop publishing for corporations. Apple President John Sculley to speak on corporate dt-p. Contact: Interconsult, (617) 547-0332.

8-12 **USENIX Show,** Phoenix, Ariz.

Two days of all-day tutorials on Unix software problem solving, as well as a vendor exhibition and a technical program. NeXT Inc.'s Steve Jobs will provide the keynote address, possibly introducing his firm's new workstation. Contact: USENIX, (213) 592-3243.

17-18 **Managing Technical Professionals,** Atlanta

Training in supervisory skills for managers responsible for software development projects. Contact: Kelly Baily, ADAPSO Education Department, (703) 522-5055.

22-26 **A/E/C Systems '87,** Washington

The Eighth International Computer and Management Show for the Design and Construction Industry presents seminars and tutorials focusing on the use of computers in architecture, engineering and construction. Contact: Sharon Price, A/E/C Systems Inc., (203) 666-6097.

22-26 **Guidelines' Apple/Macintosh Forum,** Washington

Concurrent with the A/E/C Systems '87. The forum involves 25 workshops by design and construction professionals, educators, software developers and vendors on the role of the Macintosh in the design professions. Contact: Fred Stitt or Linda Torno, Guidelines, (415) 254-9393.

Getting PageMaker 2.0 out the door

BY MICHAEL GOODWIN
MacWEEK Staff

SEATTLE — For four months, ever since PC PageMaker was released in January, it has been very quiet at Aldus Corp., the company that put desktop publishing on the map (with a little help from Apple). Some would have said "too quiet." And they would have been right.

A time bomb was ticking at Aldus. Two time bombs, actually. Not only was the software house (founded in 1984 with less than $1 million) about to release an upgrade to Mac PageMaker, providing major new features to counter competitors like Paramus-N.J.-based Letraset and Denver-based Quark, it was also preparing to follow Redmond, Wash.-based Microsoft's lead by going public on the New York Stock Exchange.

Ever since Aldus' President Paul Brainerd invented the term in 1984, desktop publishing has been permanently associated with the Macintosh computer (and for most users, the LaserWriter); it was hard to imagine doing page layout on a PC.

For months the PageMaker faithful have been waiting for Mac Version 2.0, which had been promised for the end of 1986. Speculation about the delay centered on the IBM version: Had Aldus pulled programmers off the Mac project to speed the PC release?

When MacWEEK visited Aldus late in April, every employee from Brainerd to programmers, PR directors and receptionists were busy shaking down Version 2.0. Every desk had a Mac (some desks had three), and almost every one was running the new version. Presumably, all the bugs were long-gone. But the update has many new functions, including a built-in dictionary for professional hyphenation and justification; improved control over inter-word spacing, letter-spacing and kerning; and an industry first — gray-scale capability allowing the user to import high-quality scanned images, such as photographs, using a new half-tone standard called TIFF (Tag Image File Format).

Product Manager Steve Gold has been responsible for bringing PageMaker 2.0 from code to customer. He was understandably crazed with the release deadline virtually on top of him, but he found a few seconds to talk.

"It's my baby," he said, happily, and then hesitated. "Well, I'm not exactly the father. Midwife, maybe. I'm shepherding it through the system and making sure everything's kosher and copacetic. The real parents are our customers because 2.0 is a result of letters and comments from our 50,000 users. I'm just delivering their baby."

GEOFF MANASSE

Paul Brainerd, president of Aldus.

Asked about the persistent rumors that key personnel had been moved over from the Mac upgrade project to the IBM version, slowing the former's release, Gold says no. "There were some people who were shared between both projects," he says, "but there are different groups, and it's a very different environment between 'that other machine' (the IBM PC) and the Macintosh. Actually, we learned a lot from the PC version that we put into the Mac, so as a Mac person, I consider the PC product a beta-test version of 2.0."

Brainerd agrees. "There's no question that we're later than we'd have liked to have been," he says. "We were hoping to have 2.0 out by the end of last year. But it's important to stress that we didn't deliberately delay 2.0 because of the DOS version. We wanted to make absolutely certain our software would run on the Mac II, and Apple was only able to give us the final version of the operating system three weeks ago. The other factor was Microsoft. We wanted to make sure PageMaker could import files in Word 3.0 format, especially given the large installed base of Word users, and we were only able to get the final formats from (Microsoft) in February. Those factors slowed us down. On the other hand, the delay allowed us to get some new features that are *not* in the PC product into 2.0 — particularly the gray-scale TIFF and text file export. We will be retrofitting the PC version to include TIFF."

This has been a very good year for Aldus. Sales last year were estimated at $11 million, and if 2.0 is as successful as Brainerd expects, PageMaker should quickly regain the Mac marketshare it has lost to programs like Ready,Set,Go! 3 and XPress. Going public is merely icing on Brainerd's cake. He's particularly gratified about PageMaker 2.0's new gray-scale capability.

"To my knowledge, no other desktop-publishing program can handle gray-scale images," he says. "It's one of the areas we're really focusing on, this area of scanned images. We think it's very important for desktop publishing. We've been working very closely with hardware vendors to take advantage of the capability that's in the scanners but not being used because the interface hasn't been defined yet. So we're taking the leadership role in helping to define it."

Brainerd's background is in journalism, not computer programming. He was editor in chief of the Minnesota Star, where he became increasingly involved with the implementation of technology. Then he joined ATEX Inc. of Bedford, Mass., the company that makes a widely used text-processing system for newspapers and magazines. "I and some of the key technical founders of Aldus have been deeply involved in this area for almost 15 years, going back to the very beginning of trying to integrate text and graphics," Brainerd says. "When I came in they were still punching out paper tape. You'd feed it into a DEC or an IBM 1130 and out would come phototype. Way back when, IBM actually had a dominant position in computer typesetting.

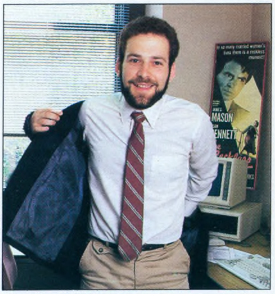
"We had worked on a number of systems for integrating text and graphics in the mid to late '70s with the Newspaper Development Group. The technology was very expensive at that time. A graphics workstation cost $50,000 and didn't have nearly the capability a Mac has today. What we learned more than anything was how to make these things usable by real people, how to give these tools back to the people who create the material. We needed a page layout system that would be easy enough for the sports editor and the news editor. And these people were not experts at production, particularly on a newspaper deadline where you're closing pages every few minutes. PageMaker is really the fourth generation of our development team working on this issue."

Does Brainerd think that Apple is upset with Aldus' new relationship with IBM? "Initially we had a very close working relationship. After forming our company, I went to work with Bruce Blumberg, who was Apple's LaserWriter product manager. I submitted a plan in the first quarter of 1985, stating what I thought Apple could do as a marketing program for selling the Macintosh, LaserWriter and desktop publishing. That became the basis for Apple's marketing efforts worldwide."

Then why has Apple dropped Aldus from its ads since the IBM PageMaker was released?

"Apple's official position is that there are several desktop products to meet different customer needs. You will note, going back in their advertising seven or eight months, that they've identified it more as Apple's desktop publishing rather than with any specific product.

"Apple has many developers, including Microsoft and Lotus, that work in both machine environments. It's fair to say that certain individuals at Apple had concerns when we brought out PC PageMaker. When I met with those people we just took that straight on. They'd start chiding me or giving me a bad time in a humorous way, and I'd say, 'If you were in my position as a software developer, what would you do?' I must have done this 15 or 20 times over the past six months, and in every last case they'd come back and say — or, depending on where they were, they might whisper — 'I'd be developing for IBM as well.'


GEOFF MANASSE

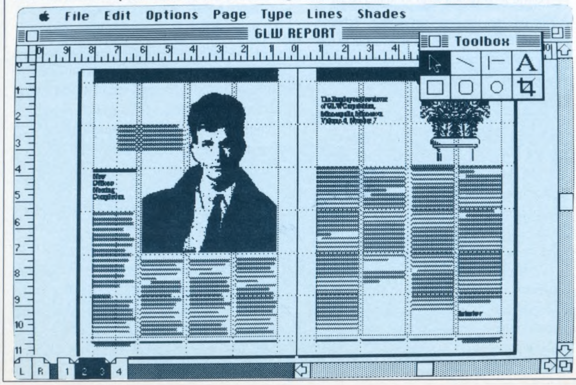
PageMaker 2.0 is Steve Gold's baby.

"Apple can benefit since desktop publishing is an integrating application and PageMaker is an integrating application, and John Sculley has been talking a lot about how they're going to coexist with IBM through data transfer. PageMaker is the first real example of that. At Apple's suggestion, we wrote in the capability to read MultiMate, WordStar — all these formats that exist in the PC environment, and bring them over to the Mac.

"We continue to work very closely with Apple on a day-to-day basis. On a monthly basis, we probably have contact with at least 300 people at Apple. I was just in Europe and we were demonstrating at a French computer show on the Apple stand. And both parties benefit."

And maybe users as well. ■

Aldus has added many features to the new version of PageMaker for the Mac, including gray-scale capability.



SYSTEM 4.1

Continued from Page 1.

problem, according to Microsoft. "If users were smart enough to fill out their registration card they should now have no problem," said a company spokeswoman.

However, that does not help users who may already be using the old releases with the new system software, Hertzfeld said.

An Apple customer service representative said she could not confirm the existence any bugs. "You just can't fix all the bugs right away," she said.

Apple says the new operating system lets users take advantage of the new hardware features, including expansion slots on the Mac SE and color on the Mac II, Horn said.

Any user with a 32-Mbyte or larger disk drive should switch to System 4.1 right away, according to Horn. "A bug in versions prior to 4.1 makes it unsafe to use the hard disks."

The company has enhanced many of the utilities that come with System 4.1, including printer drivers; Disk First Aid, which helps to recover data from a crashed hard disk, and Apple HD SC Setup, which sets up the SE's hard drive.

"The new printer drivers allow users to rotate and invert images," says Chris Bryant, Apple's marketing manager for desktop communication. In addition, the new drivers support very large-capacity SCSI drives, some as large as 350 Mbytes, he said.

The improved LaserWriter driver prints at twice the speed, Horn said. Other enhancements include the abilities to boot up the Mac from any SCSI drive on the system and to move the cursor with numerical pad keys.

The new operating system will also allow the Mac II to be used as a file server on an AppleTalk or Ethernet network, Bryant said.

System 4.1, which comes on three 800-Kbyte floppy disks, is shipping with all new SEs and IIs and is required for Mac II operation. Upgrades are available free to current SE users from Apple dealers or on-line services like Delphi and CompuServe, Apple says. ■

APPLESHARE

Continued from Page 1.

Apple has already informed dealers about the product. Upgrades are expected to be provided free to authorized resellers. Dealers will decide whether to charge users for installation.

The new version reinforces AppleShare's strategic value for Apple, and its release signals the firm's intention to continue evolving the program. Introduced Jan. 29 as part of Apple's push for "desktop communications," the file server is an essential part of Apple's campaign for acceptance by the corporate market. Also, it provides developers with specifications for designing network-based Mac applications.

The initial release of AppleShare received high marks from users for its ease of use, but some observers faulted its power and functionality, especially in comparison to leading networking products in the IBM world.

According to Derek Brown, product manager for Mac products at 3Com Corp. of Santa Clara, Calif., "AppleShare is a brilliant product but it's also extremely limited in what it can do. It's good for a small group of workers in the same office, but there are now networks that link thousands of employees in companies spread throughout the world. You have to realize the IBM world is about two years ahead with thousands of rock-solid installations. A listing of capabilities for these systems goes on for page after page, leaving AppleShare looking somewhat simplistic," he said.

A more optimistic tone was struck by Robert Clark, vice president for marketing consulting with the Seybold Group of San Jose, Calif. "It's fair to say that AppleShare is a very serious business tool," he said. "We've been testing and using one here for months and it's done very well."

Clark said he was particularly impressed with AppleShare after comparing it with similar MS-DOS systems. While other systems may be up to 40 times faster, that doesn't matter much in small working environments of 12 to 15 workstations, he said. "The majority of business networks are very small, anyway," he said, "so the weakness of AppleShare isn't in its ability to adequately serve most work groups, but to provide gateways to much larger networks."

Version 1.1 will not answer all user wishes, but sources expect Apple to release future versions of AppleShare as a database server with gateways to major communication networks already installed in the MS-DOS world.

Other items on users' and developers' wish lists include:

- Eliminating the requirement that a Mac and hard disk be dedicated to network service;
- Being able to perform system administration functions while the network is running;
- Protecting against unauthorized restarting of the AppleShare network. Such restarts permit access to all server files through the computer's floppy disk.

Apple contends most difficulties reported are not problems with AppleShare, but the result of user inexperience. For example, some users worry that the system fails to guard against "kidnapping" commonly available folders, in which an abductor can nab another person's folder by dragging it into his folder. This can be prevented by locking the root directory.

Apple similarly dismisses the performance questions. According to Chris Bryant, Apple's marketing product manager for local-area networks, "Some of the limitations mentioned aren't those of AppleShare but the environment in which it's running. If you run the system on a Macintosh II, you'll see the speed go up very significantly," he said.

Bryant said the development of AppleShare is following Apple's philosophy of first meeting customer needs. "First we try to supply functionality and ease of use and then we evolve a product's performance," he said. ■

BOESENBERG

Continued from Page 1.

sales and service techniques, says a recently-departed member of Apple's sales force.

The firm's traditional "one-person/one computer" sales attitude will be giving way to a network administration approach. One of Boesenberg's tasks will be overseeing the change.

Before coming to Apple, Boesenberg was vice president and general manager for Data General's European, Middle East and African markets. He had previously spent 10 years in IBM's sales and marketing division.

Although Apple does not plan to de-emphasize the home and school computer markets, the firm's focus will be on the business market, said an Apple spokeswoman.

As Boesenberg directs the company into that market, said Peter Ting, a securities analyst with Davis, Skaggs/Shearson-Lehman in San Francisco, he is going to want to be "very careful who the company dances with."

Ting said he expects the company to move cautiously in approaching the technical workstation and to emphasize its strengths, like the reservoir of Mac programs, while de-emphasizing its weaknesses, such as the Mac's slower performance than a comparably-priced Sun workstation. He said he doesn't expect Boesenberg to immediately market the Mac II head-to-head against the Sun or Apollo workstations.

Despite the technical similarities between the Sun workstation and the Mac II, Ting said, "I expect for the next two years they will move gradually, emphasizing (the Mac II) as a high-end Macintosh. The market is segmented enough that Apple doesn't need to move directly to the technical workstation."

Besides, he said, Sun's recent cost-cutting shows no one should expect it to roll over for the Mac II. But the blurred line between the workstation and the high-performance computer will work to the Mac II's advantage.

The market-research firm Dataquest Inc. put Apple's 1986 share of the business-office market at 8.8 percent. It projects total sales of Mac IIs to reach 60,000 units this year. ■

COPYRIGHT

Continued from Page 1.

field or not. One solution is to just have them send in their disk, and we'll send out another one, but that's a very expensive thing for us to do. It would be better to develop a patch," he said.

Another solution to the problem is to simply drop copy protection all together, which is what Lotus plans to do with Galaxy when it is released. "We expect a whole lot of our Jazz users to exchange Jazz for Galaxy, which is not going to be protected," said Hertz.

Other firms that continue to use the Softguard copy protection are making upgrade disks available to Mac II and SE users. Vamp Inc. of Los Angeles, for example, is providing users with upgraded versions of its Mcad line of electronic CAD/CAM software that is copy protected by Softguard. Mcad users who pay $95 annually for a support program will receive the update automatically, said George Soluk, vice president of engineering for Vamp. Others can contact the company for an update.

Yet another user of MACLoK, Adobe Systems Inc. of Palo Alto, Calif., will incorporate the upgraded copy-protection scheme in Version 1.11 of Adobe Illustrator, a line art illustration package. Once Illustrator users register their packages with Adobe, they are automatically sent a non-protected version of the program, so existing users are not affected by the incompatibilities, said Liz Bond, director of marketing communications. Adobe expects the new version to be available by the end of May.

The problems due to copy protection are with the Mac II and the dual-floppy drive SE, said Scott Mesch, director of marketing for Softguard. Since the old Mac Plus had just one drive, the copy protection scheme will work properly on the SE only if the software is running from the bottom drive, he said. The problem with the Mac II is that Apple changed the way software talks to the disk, said Mesch. ■

Copy protection fades in Macintosh world

Copy protection has long been a topic of debate between users and software developers. But in both the Apple Macintosh and IBM PC worlds, users have largely won the battle for protection-free software.

Microsoft Corp. and Ashton-Tate removed copy protection on their U.S. software packages last year. Even Lotus Development Corp. will soon abandon its policy of copy-protecting Jazz when it releases the program's successor known as "Galaxy." Lotus maintains copy protection on 1-2-3 and Symphony for the IBM PC, however.

This double standard of copy protecting IBM PC but not Macintosh software is because "the stuff on the PC is more important to us than the (software on the) Macintosh," said Adam Hertz, Lotus development manager for Galaxy.

Although most major software houses have dropped copy protection, many smaller firms continue to use it. Softguard Systems Inc. of Santa Clara, Calif., makers of the protection schemes MACLoK for Macintosh software and SUPERLoK for PC software, estimates 1,500 firms use copy protection.

Developers who specialize in vertical applications are among those keeping copy protection on products, said George Soluk, vice president of engineering for Los Angeles-based Vamp Inc., maker of Mcad, an electronic CAD/CAM program .

Because the Mac is only now beginning to sell in large numbers, highly specialized software has not been selling in large volumes, he said. To recover investments, high prices and copy protection that guarantees one user per package are necessary, said Soluk. ■ *— Kristina Sullivan*

MAC THE KNIFE

Punch-on. Sign-on. Download.

"Talk to me, Mac, talk to me," types Emily, the MacWEEK sysop.

"Read the electric wind, dear Emily. Macswell coming at you. It goes like this …

My main man, with grievous concerns/complaints, calls a supplier about the new LaserWriter driver. Gets patched into a conference call with an Apple tech-support guy.

My pal describes the problems. Again. "Oh, yeah," Applecheek says. "Just use the old driver — 3.1 — like we do. The new one is too buggy."

"But you're shipping it with every SE?"

"Well, it's kind of like a beta. We're testing it."

Meanwhile, meanwhile …

All you junior high school job counselors, forget about hyping growth careers in nursing or discount store management. Read the papers, read the bulletin boards. The future is there. Apple buys full-page ads in the San Jose Mercury-News. To sell? No, to buy — buy experienced Macintosh programmers of the UNIX variety.

The Knife, no dull blade he, is enamored with the words of delight out of the West Coast lab of Phoenix Technologies, one of the heavyweight chip designers that turned IBM into a clone chaser. Phoenix is in cahoots with AST and Apple to be first on the street with a Mac II/Mac SE coprocessor board that will run DOS. (AST will market them as the "Mac286" and the "Mac86" for the SE.)

The 286 board is done and the software is being fine-tuned, getting some bugs out of the color screen mode. But the Mac86 — the one everyone is waiting for because the SE is the only product really on the market — is going to take longer.

Seems the 286 version will run concurrently with the 68020, but the 8086 version needs software to switch from Apple's Motorola to the Intel chip. "Right now, the SE version is running real slow," says the ashy bird. "But the same software will drive both boards."

The Phoenix West gang claims the boards are running everything from Flight Simulator to Sidekick. But you heard that? Get this then: one chippy tells The Knife, more or less indirectly, "(It's) fun to look at Sidekick's calculator and the Calculator desk accessory side-by-side, and cut and paste between them …"

Terrif. Some people really know how to get down, cut loose. Keep 'em out of my way.

And the blade hears that Personal Computer Peripherals Corp. just picked up almost all the General Computer sales rep houses. Mac the K isn't saying this is exactly how the deal came down, but developers initially are willing to pay a high margin to the reps, who, in turn, get the product into the marketplace. Once there and established, the Mfg'ers tend to say, "Do we need those guys? Let's just beef up our own sales department." And PCPC fills the pocket in the rep's sample case.

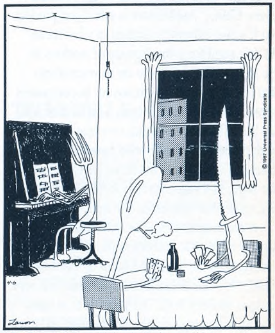
Mac The Knife has uncovered Jasmine's plans to offer Mac Plus users a 40-Mbyte drive that literally snaps on the back. Sure enough, it is called BackPac 40. The entire unit weighs only 2.6 pounds, my sources tell me, and features a Conner Peripheral 40 drive. Shipping will probably begin in mid-July.

And down database alley, it looks like OMNIS 3 Plus is going to be moving into the MS-DOS universe, maybe as soon as next month. "It will be completely (watch your step) compatible with the Mac version. You could even mix and match them on a TOPS network."

* * *

The Knife is waiting. MCI: "MactheKnife." I've got the quid — a MacWEEK mug — if you've got the pro quo. ■

THE FAR SIDE By GARY LARSON



In the early days, living in their squalid apartment all three shared dreams of success. In the end, however, Bob the Spoon and Ernie the Fork wound up in an old silverware drawer and only Mac went on to fame and fortune.

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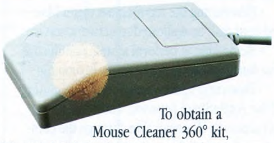

To obtain a Mouse Cleaner 360° kit, visit your local Apple Dealer or send in the coupon below.

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New for the Mac Plus!

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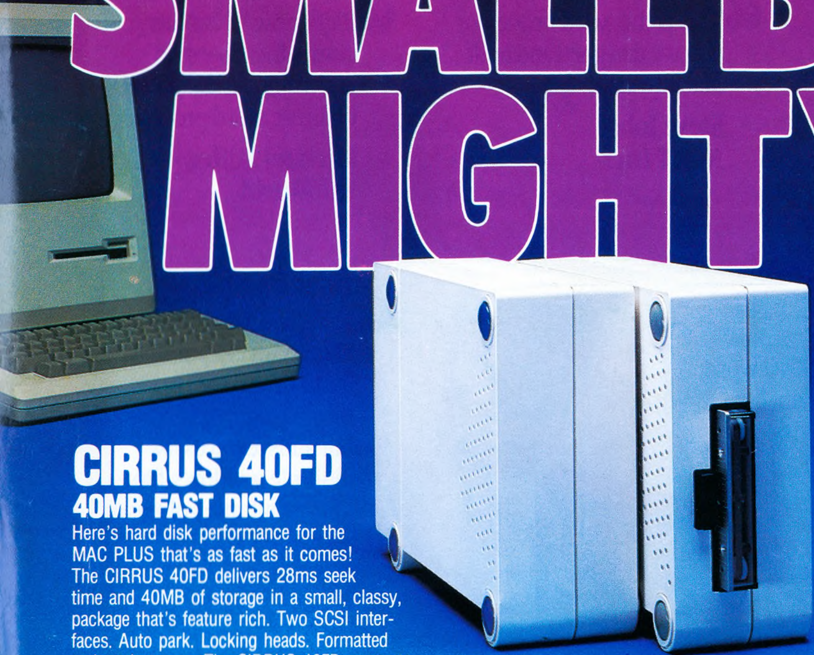

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MacTimes

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Dan Farber,
MacWorld Magazine

“WriteNow adds up to a great new word processor. It’s ease of use and speed put it way ahead of Microsoft Word and MacWrite for most jobs.”

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MacUser Magazine 1986

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“This is the word processor that we designed and built Macintosh for.”

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Robert Forras,
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“WriteNow adds up to a great new word processor. It’s ease of use and speed put it way ahead of Microsoft Word and MacWrite for most jobs.”

Vicky Jo Varner,
The MACazine

“T/Maker’s WriteNow For Macintosh is a polished word processor that retains the elegance of MacWrite but adds features like multiple windows, footnotes, multiple columns, and a spell checker.”

Dan Farber,
MacWorld Magazine

Best New Word Processor
MacUser Magazine 1986

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